DOCUMENT RESUME

ED 123 836	EC 090 105
TITLE	Screening of Schoolchildren. Hearing Before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor, House of Representatives; Ninety-Fourth Congress. First Session, Washington, D.C., October 6, 1976.
INSTITUTION	Congress of the U.S., Washington, D.C. House Committee on Education and Labor.
PUB DATE	Oct 75
NOTE	171p.; Not available in hard copy due to small type in parts of document
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402
EDRS PRICE	MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS	Elementary Secondary Education; Exceptional Child Services; *Federal Aid; *Federal Legislation; *Screening Tests; Vision Tests; *Visually Handicapped
IDENTIFIERS	*National Comprehensive Vision Care Act

ABSTRACT

Presented is the text of hearings on H.R. 4092, the National Comprehensive Vision Care Act of 1975, a bill to authorize grants to states for the establishment of vision screening programs for public school students. Included are the text of the act and prepared statements of such persons as Lester Barad, director of the Bureau for the Education of the Visually Handicapped; Jerry Jolley, an optometrist and director of an outreach clinical program; Charles Rangel, a congressional representative from New York; Beatrice Moore, the director of an Early Periodic Screening, Diagnosis, and Treatment Program; and Virginia Boyce, executive director of the National Society for the Prevention of Blindness. Also included are various prepared statements, letters, and supplemental materials such as a letter and attachments from Richard Dowling of the American Speech and Hearing Association. (DB)

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SCREENING OF SCHOOLCHILDREN

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HEARING

BEFORE THE

SUBCOMMITTEE ON ELEMENTARY, SECONDARY AND VOCATIONAL EDUCATION

OF THE

COMMITTEE ON EDUCATION AND LABOR
HOUSE OF REPRESENTATIVES

NINETY-FOURTH CONGRESS

FIRST SESSION

HEARING HELD IN WASHINGTON, D.C.
OCTOBER 6, 1975

Printed for the use of the Committee on Education and Labor

CARL D. PERKINS, *Chairman*

U.S. GOVERNMENT PRINTING OFFICE
64-589 WASHINGTON : 1976

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CONTENTS

Page

Hearing held in Washington, D.C., October 6, 1975 1
Text of H.R. 4092 1

Statement of—

- Barad, Lester, director, Bureau for the Education of the Visually Handicapped, Dade County, Fla.; Katheryn B. Horton, the Bill Wilkerson Hearing and Speech Center, Nashville, Tenn.; Peter Paraskeva, coordinator for the visually handicapped, Dade County, Fla 35
- Dickson, Dr. James F., III, Acting Deputy Assistant Secretary for Health, Department of Health, Education, and Welfare, accompanied by: Dr. Albert L. Alford, Assistant Commissioner for Legislation, Office of Education, DHEW; Beatrice Moore, Director, Early Periodic Screening, diagnosis and treatment program, Medical Services Administration, Social and Rehabilitation Service, DHEW; Dale Sopper, Acting Deputy Assistant Secretary for Legislation (Health), and Dr. Muriel Kaiser, National Eye Institute 25
- Jolley, Jerry, O.D., M.P.H., director, outreach clinical program, Southern California College of Optometry, Fullerton, Calif.; accompanied by Lerance Harwood, O.D., F.A.A.O., chief of staff, Center City Clinic, Pennsylvania College of Optometry, Philadelphia; and Dennis M. Yamamoto, O.D., associate director, Washington office, American Optometric Association 7
- Rangel, Hon. Charles B., a Representative in Congress from the State of New York 3

Prepared statements, letters, supplemental materials, etc.:

- Arnold, Barbara J., M.D., East Portland Eye Clinic, Portland, Oreg., letter to Chairman Perkins, dated October 13, 1975 67
- Barad, Lester, director, Bureau for the Education of the Visually Handicapped, Board of Education of the city of New York:
  - Prepared statement of 38
  - Script of slide presentation 52
- Blackhurst, Robert T., M.D., president, Michigan Ophthalmological Society, Lansing, Mich., letter to Chairman Perkins, dated October 6, 1975 59
- Boyce, Virginia S., executive director, National Society for the Prevention of Blindness, New York, N.Y.:
  - Letter to Chairman Perkins, dated November 4, 1975 79
  - Position statement on H.R. 4092, etc 80
- Crossen, Robert J., M.D., Grosse Pointe, Mich., letter to Chairman Perkins, dated October 10, 1975 60
- Currey, Thomas J., M.D., president, Tennessee State Academy of Ophthalmology, Knoxville, letter to Chairman Perkins, dated October 14, 1975 68
- Davidson, David W., O.D., director of vision services, University of Alabama in Birmingham, letter to Chairman Perkins, dated October 27, 1975 76
- Dickson, James F., III, M.D., Acting Deputy Assistant Secretary for Health, Department of Health, Education, and Welfare, prepared statement of 21
- Dowling, Richard J., director, Governmental Affairs Department, American Speech and Hearing Association, Washington, D.C., letter to Chairman Perkins, dated October 17, 1975 108

Statement of—Con.

Page

Fellman, R. G., M.D., Beaverton, Oreg., letter to Chairman Perkins, dated October 30, 1975 72

France, Thomas D., M.D., University of Wisconsin Hospitals, Madison, letter to Chairman Perkins, dated October 21, 1975 68

Friendly, David S., M.D., Children's Hospital, Washington, D.C., letter to Jack Jennings, dated October 10, 1975 73

Goodling, Hon. William F., a Representative in Congress from the State of Pennsylvania, letter to Chairman Perkins enclosing a letter, dated October 27, 1975 166

Haffner, Alden N., O.D., Ph.D., dean, State University of New York, letter to Chairman Perkins, dated October 10, 1975 69

Harwood, Lorance W., O.D., chief of staff, Center City Clinic, Pennsylvania College of Optometry, Philadelphia, prepared statement of 10

Hirschfelder, Dennis, program assistant, National Society for the Prevention of Blindness, New York, N.Y., letter to Chairman Perkins, dated October 9, 1975 78

Horton, Kathryn B., chief, Language Development Programs, Bill Wilkerson Hearing and Speech Center, Nashville, Tenn., prepared statement of 44

Jolley, Jerry L., O.D., M.P.H., director, outreach clinical program, Southern California College of Optometry, Fullerton, California, prepared statement of 7

Lashof, Joyce C., M.D., Director of Public Health, Department of Public Health, State of Illinois, letter to Chairman Perkins, dated December 9, 1975 56

Morledge, Charles C., M.D., president, Montana Academy of Ophthalmology, Billings, letter to Chairman Perkins, dated October 10, 1975 64

Nowell, John F., M.D., Annandale Doctors Building, Annandale, Va., statement of 74

Paraskeva, Peter C., coordinator, Programs for Visually Impaired, Dade County Public Schools, prepared statement of 41

Patterson, Walter, M.D., president, Section on Ophthalmology, District of Columbia Medical Society, letter to Chairman Perkins, dated October 13, 1975 61

Piper, Frank J., M.D., Medical Arts Building, Syracuse, N.Y., letter to Chairman Perkins, dated October 11, 1975 62

Ramsell, John T., M.D., for the Nebraska Academy of Ophthalmology, Omaha, letter to Chairman Perkins, dated October 14, 1975 63

Reizen, Maurice S., M.D., director, State of Michigan, Department of Public Health, Lansing, letter to Chairman Perkins with several enclosures, dated October 10, 1975 100

Sherman, Arnold, O.D., Merrick, Long Island, N.Y., letter to Chairman Perkins enclosing an article, dated October 16, 1975 64

Spencer, (Mrs.) James L., president, the Auxiliary to the American Optometric Association, letter Chairman Perkins, dated October 10, 1975 64

Stadt, Marshall B., O.D., Citrus Heights, Calif., letter to Chairman Perkins, dated October 28, 1975 57

Weinstock, Frank J., M.D., Canton, Ohio, letter to Chairman Perkins, dated October 8, 1975 60

Winton, H. P., O.D., president, American Optometric Association, Washington, D.C., letter to Chairman Perkins, dated October 20, 1975 68

Wylie, Hon. Chalmers P., a Representative in Congress from the State of Ohio, letter to Chairman Perkins enclosing a letter, dated November 21, 1975 71

SCREENING OF SCHOOLCHILDREN

MONDAY, OCTOBER 6, 1975

House of Representatives,
Subcommittee on Elementary, Secondary, and
Vocational Education of the
Committee on Education and Labor.
Washington, D.C.

The subcommittee met, pursuant to notice, at 9:38 a.m., in room 2175, Rayburn House Office Building, Hon. Carl D. Perkins (chairman of the subcommittee) presiding.

Members present: Representatives Perkins, Lehman, Risenhoover, Simon, Miller, Mottl, Jeffords, and Goodling.

Staff members present: John F. Jennings, counsel for majority, Stanley Sadlak, clerk assistant, and Christopher Cross, minority senior education consultant.

[Text of H.R. 4092 follows:]

[H.R. 4092, 94th Cong., 1st sess.]

A BILL To authorize grants to States for the establishment of vision screening programs for public school students

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Comprehensive Vision Care Act of 1975".

Sec. 2. The Congress finds that—

(1) the availability in schools of vision screening for students at an early age is most vital to all Americans because most vision problems can be relieved and corrected by early detection and adequate treatment;

(2) vision care is necessary in order to give each child the opportunity to do his best without being hindered by hidden physical problems; and

(3) screening and examination of young children for vision problems serves the need (A) to detect eye disorders, (B) to recognize vision problems as they develop so that they may be corrected or minimized, and (C) to detect visual handicaps so that any resulting adverse effects on a child's learning ability are minimized.

(b) It is the purpose of this Act to provide all schoolchildren the opportunity to obtain vision care through free vision screening and necessary followup services.

Sec. 3. (a) The Secretary of Health, Education, and Welfare (hereinafter in this Act referred to as the "Secretary") may make annual grants to States for their costs of (1) establishing and operating programs under which students in the public schools of the States (A) will give without charge annual vision tests (meeting such standards as shall be prescribed by the Secretary with the approval of the panel established under subsection (b)), and (B) will provide, without charge, appropriate necessary followup services (including ophthalmologic and optometric services and eyeglasses) as determined under regulations prescribed by the Secretary; and (2) training of personnel to administer such tests. In operating such a program with grants provided under this Act, a State shall give priority to tests and services for students in the first six grades of elementary school.

(b) The Secretary shall establish a panel to advise him with respect to the standards to be prescribed by him under clause (1)(A) of subsection (a). Such panel shall be composed of four opthalmologists and four optometrists who by virtue of their training and experience are especially qualified to advise the Secretary with respect to such standards.

(c) The Secretary shall make an annual report to the Congress respecting the grant program authorized by subsection (a) and shall include in such report his recommendations for such legislation as he deems appropriate.

SEC. 4. No grant may be made under this Act unless an application therefor has been submitted to and approved by the Secretary. Such an application shall be in such form, submitted in such manner, and contain such information, as the Secretary may require. Payments under grants under this Act may be made in advance or by way of reimbursement, and at such intervals and on such conditions, as the Secretary finds necessary.

Chairman PERKINS. A quorum is present.

The Subcommittee on Elementary, Secondary, and Vocational Education is conducting a hearing this morning on the general topic of screening of schoolchildren for physical defects.

We will also hear testimony on a bill which deals solely with screening for visual defects, the National Comprehensive Vision Care Act of 1975, H.R. 4092, introduced by Congressman Rangel of New York.

It is estimated that 3 out of every 100 schoolchildren in the United States have impairments in one or more of the basic processes involved in understanding, or in using spoken or written language, and that these impairments limit their ability to read, write, or grasp principles.

In addition to these millions of learning disabled children, it is estimated that many thousands more of our schoolchildren suffer from undetected, and correctable, visual and hearing impairments.

Therefore, some school boards and various organizations across the country have undertaken screening procedures to identify these disorders and to correct them so that these children can learn normally. Some Federal programs along these lines include the closer look campaign of HEW's Office of Education, the early and periodic screening diagnosis and treatment program provided under medicaid, and the highly individualized "Head Start" Program.

We are here today to learn more about these Federal programs, and also to learn more about local programs. We want to know if these efforts are adequate to detect the visual and other problems being experienced by millions of our schoolchildren, or whether further action is needed.

Our witnesses today will discuss these efforts, and they will also educate us on screening in general. We would like to know of the benefits to be gained from screening and also of any disadvantages.

Before we begin, though, I would like to commend Congressman Bill Lehman of Florida for the interest he has taken in this subject. Mr. Lehman has taken the lead in the committee on the subject of screening, and we will all be turning to him for advice and counsel on what course of action we should take after today's hearing.

As our first witness this morning we have our colleague, an outstanding colleague from the Harlem area, Congressman Charles B. Rangel, Member of Congress, 19th District, New York.

We are delighted to welcome you here, Congressman Rangel. But before you begin, Congressman Lehman, do you want to make any further remarks?

Mr. Lehman. No. We are on a tight schedule and I think we can proceed at this time.

Chairman Perkins. Mr. Goodling?

Mr. Goodling. Nothing now.

Chairman Perkins. Go right ahead, Mr. Rangel.

STATEMENT OF HON. CHARLES B. RANGEL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW YORK

Mr. Rangel. Mr. Chairman, the people in my district would like to thank you and Mr. Lehman and the committee as a whole for the interest you have demonstrated by the enactment of laws that protect our children. It is indeed unfortunate that on the local and State level, no matter how much the concern, when you face budgetary problems it is normally the powerless who suffer most, those that do not have political clout. For this reason, I think it is imperative that the high standards of protecting the health of our children, especially as they enter the school system, must be maintained by the Federal Government.

Mr. Chairman, the bill before your subcommittee seeks to assign a greater Federal priority to the early detection of vision problems which interfere with the ability of our children to achieve normal intellectual and social growth and development.

Vision specialists, behavioral scientists and educators agree that upwards of 80 percent of all learning experiences depend upon vision. Whether a child's problem is a vision problem, a perceptual vision problem, or some type of congenital or organic disease, his ability to learn will be impaired.

It has been estimated that 1 child in 4 among the 4 million entering the first grade each year has some difficulty in learning to read. Ninety-nine percent of those who fail first grade and 90 percent of those who fail the second grade have reading difficulties. In a publication describing the new National Reading Center, issued by the Office of the President in 1970, the annual cost incurred as a result of repeaters in grade and high schools is estimated at $1.7 billion. All of the 700,000 youngsters who drop out of school each year are 2 to 3 years behind their age group in reading skills.

Because vision is the predominant sense which guides our decisions and behavior, manifestations of poor vision health have been linked to social adjustment problems. A University of Chattanooga delinquency study revealed 72 percent of delinquent boys failed one or more phases of a professional vision analysis. Similar studies in other parts of the country have verified this startling discovery. At the same time, it is a fact that children from lower income families experience more vision difficulties. This was documented in the vision screening of 36,554 school children in Michigan by the State department of health, wherein the screening failure rate of low-income children was two to three times that of children from an economically favored area.

Very frankly, the visual health of our children is a national problem which requires an immediate response from the Congress. It is a problem of particular concern to my district, as well as to other economically disadvantaged sections of the country. H.R. 4092 is designed to create a style and substance of Federal leadership in solving this problem.

How will this bill work?

Basically, my proposal will permit the Federal Government to make annual grants to the States for annual vision testing of students. Within the limits designed by the Secretary of HEW, appropriate necessary followup services—including optometric and medical services and eyeglasses—will be provided. Priority will be given to tests and services for students in grades one through six. Also, funding will be available to train screening personnel. Finally, the Secretary is to establish a panel of four optometrists and four physicians to advise him in setting up the actual grant program.

It is true that some children are already eligible for screening under the medicaid Early and Periodic Screening, Diagnosis and Treatment Program. However, EPSDT eligibility, effectiveness, and implementation varies significantly from State to State. My bill offers an opportunity to build on the vision screening component of EPSDT, use the financing already available for it, and concentrate not only on medicaid eligibles, but also any child in the first six grades of elementary school.

I respectfully urge you to approve this bill as a viable means to bring preventive vision care services to our Nation's children.

I hope that this committee would see fit to include this type of legislation in its comprehensive program.

I would like to add, Mr. Chairman, that already millions of dollars are presently being spent in certain of the universities in the city and State of New York which have already proven that many of the now teenagers that had been thought to be retarded or thought to have emotional problems have found, or were considered to be, students that would cause disturbances in the class; for the last 6 years there has been a program going on in the city university system to point out that most all of these children, initially, had visual defects that were not detected by their parents nor the school and, as a result of them constantly being unable to understand what was going on in the classroom setting, unable to understand certain classroom demeanor and instructional problems, did in fact become emotionally disturbed or disruptive.

So I appreciate the opportunity that this committee has given me to present my bill, and I hope that you will see fit to include it in that type of comprehensive program which I know this fine committee is presently studying.

Chairman PERKINS. Let me say that your proposal will certainly receive consideration. I am very much impressed with your testimony, Mr. Rangel. I think you have raised a very important point. But do you know whether any of the title I funds are presently being expended for this purpose?

Mr. RANGEL. No, Mr. Chairman, I do not. I do not know whether they are funds that are earmarked for this type of screening. Here again, if there is latitude under title I, I would be fearful that many of the local school boards would be more inclined to put that type of money into books and teachers as opposed to what appears to be a rather sophisticated program but really has proven to be just a basic defect screening.

Mr. Lehman. Thank you, Mr. Rangel. I know the chairman would want to be here through this whole hearing but, as you know, the lunch veto override comes up.

I do not think at this point anything is more important to get done than to see that we do expand the school lunch program and take care of additional needs.

I notice your bill is rather narrow. It is very important, but there are other phases that we are concerned about. I just wonder how you would react to this.

First, it deals only with visual handicaps.

Second, it takes care of them after they enter the elementary school.

I wonder how you would feel toward preschool testing and testing for handicaps other than specifically visual. I do want to say prevention programs in any learning program have been worth a pound of cure in the later grades, and this is what we are trying to do.

Mr. Rangel. I certainly support and believe it would be most favorable to start as early as possible. It is my belief that so many things could be started in prenatal care, really, in order to prevent some of the disabilities that arise later.

I just hope that the fact that this is restrictive, or the fact that this starts at the elementary school, does not dissuade this committee from going further and in more depth.

Mr. Lehman. Thank you.

Mr. Goodling. Congressman, I have several questions and also a comment or two.

Is visual screening a part of your State setup at the present time in the State of New York?

Mr. Rangel. Not to the extent that the bill would require, Mr. Goodling. It merely allows for the teachers to, at a certain distance, have the child put a patch over the eye and read the chart.

Mr. Goodling. You say it allows this, and the teachers do it?

Mr. Rangel. Yes.

Mr. Goodling. I guess it is difficult for me to understand how the Federal Government gets involved in so many of these things. In my State, for as long as I can remember, visual screening is mandated not by the teachers but by the people qualified to do it. They mandate it every so many years, as well as physicals are mandated, by people who are qualified to do that sort of thing.

Mr. Rangel. I am certain, Mr. Goodling, you would have no objection to the Federal Government catching up with the progressive programs that your State has already.

Mr. Goodling. My objection is that the States should have done it a long time ago and the Federal Government should not have to do it.

Mr. Rangel. I could not agree with you more, but I do not think the children have the luxury of determining which level of government is reaching out for them.

Mr. Goodling. The second concern I have is, we have to make sure that the legislation is written in such a manner that it does not become a rip-off. We have had to change our program in my State, on several occasions, for instance.

For instance, if a doctor could examine 20 people at once and in some cases they tried to do that; like an Army physical in that if you could see to walk by the doctor, you were OK.

Mr. **Rangel**. If there is any apprehension that this program does not become the optometrists retirement bill, I join with you, because I have had similar dissatisfaction with many of the federally operated medical programs in my district.

Mr. **Goodling**. The second problem is, the frustrating experience comes when you then discover the problem and either the parent does not take the initiative to do anything about it or they are not in a position to do anything about it. This happens time and time again.

You have discovered the problem with the mouth, the problem with the eyes, or the physical problem, but then getting something done about it becomes a real experience. Just giving a personal experience, my daughter in the first grade had just finished her physical with her pediatrician and we got a notice home from the eye-screening that we certainly should see an eye doctor, because of a vision problem they thought she was having.

Lo and behold! She was so nearsighted it is a wonder she could see to function at all. But the pediatrician even missed that in the annual physical held just before she went to school.

We have to make sure the legislation is written in such a manner that it, first of all, does not become a rip-off.

Mr. **Rangel**. There is a provision for followup once a defect is detected.

Mr. **Goodling**. Thank you.

But again, I am amazed that the State of New York has not already done all of this.

Mr. **Rangel**. Before this Congress is over, New York State is going to bring further amazements to the House floor.

Mr. **Goodling**. The city already has.

I have no further questions.

Mr. **Lehman**. Thank you.

Mr. Mottl?

Mr. **Mottl**. I have no questions of my distinguished colleague from New York at this time.

Thank you, Mr. Chairman.

Mr. **Lehman**. Thank you, Congressman Rangel. You have gotten us off to a very good start. We will try to carry the ball from here.

We have now three separate panels that are to testify and, in order to get these panels heard fairly and equitably, we are going to have to limit each panel to 30 minutes.

If you have written testimony, I suggest that each of you summarize so that we can get the testimony before us, and then still have time for questions from the members.

I am going to have to cut each group at the end of 30 minutes in order to be fair to all three groups. So see what you can do to work with us on this basis so we can get the maximum amount of input without cutting off anyone at the end of the morning.

So to begin, we are going to have Dr. Earle Hunter, the Division Director of the Professional Development Division of the American Optometric Association, St. Louis; Dr. Lorance Harwood; Dr. Jerry Jolley, Southern California College of Optometry, the East Coast, the Midwest, and the West Coast.

We have a pretty good geographic balance here.

STATEMENT OF DR. JERRY JOLLEY, O.D., M.P.H., DIRECTOR, OUTREACH CLINICAL PROGRAM, SOUTHERN CALIFORNIA COLLEGE OF OPTOMETRY, FULLERTON, CALIF.; DR. LORANCE HARDWOOD, O.D., F.A.A.O., CHIEF OF STAFF, CENTER CITY CLINIC, PENNSYLVANIA COLLEGE OF OPTOMETRY, PHILADELPHIA, PA., AND DR. DENNIS M. YAMAMOTO, O.D., ASSOCIATE DIRECTOR, WASHINGTON OFFICE, AMERICAN OPTOMETRIC ASSOCIATION

Dr. YAMAMOTO. Mr. Chairman, I am sorry, but Dr. Hunter could not attend the hearings today.

I am Dennis Yamamoto, the Associate Washington Office Director of the American Optometric Association. Representing the association this morning are Dr. Jerry Jolley and Dr. Larry Harwood.

Dr. Jolley is presently the director of the Outreach Clinical Program at the Southern California College of Optometry in Fullerton, Calif.

Dr. Harwood is the Chief of Staff at the Center City Clinic at the Pennsylvania College of Optometry in Philadelphia, Pa.

Mr. Chairman, we would like to submit for the record a more detailed statement of the two presentations by Dr. Jolley and Dr. Harwood.

Mr. LEHMAN. Without objection.

[Prepared statements referred to follow:]

PREPARED STATEMENT OF JERRY L. JOLLEY, O.D., M.P.H., DIRECTOR, OUTREACH CLINICAL PROGRAM, SOUTHERN CALIFORNIA COLLEGE OF OPTOMETRY, FULLERTON, CALIF.

The American Optometric Association, representing the nearly 20,000 optometrists now practicing in the United States, is pleased to support the concepts contained in H.R. 4092 sponsored by Representative Charles Rangel of New York. At the same time, we would like to suggest several amendments in the spirit of perfecting the bill.

NEED FOR THE BILL

Enactment of the basic provisions of H.R. 4092 would lend needed support to the early detection, examination and treatment of conditions of the vision system. Many studies of vision programs and most authorities agree that approximately one-third of the general school age population has a significant vision problem that may affect their performance or potential.

Effective vision is vital to the future lives of our children. Current school vision screening programs are not reaching a majority of the children, and needed vision care is not financially available to all. There are effective screening methods now being utilized which can be applied throughout the United States.

We would like to comment on each of these points.

Why is good vision of paramount importance to the schoolage child?

On a statistical basis alone, vision problems requiring treatment range in frequency from 20-25 per cent for children ages 5-14 to 31 per cent for age-group 15-19. These statistics underscore the fact that there is a steady increase of significant vision problems until stabilization takes place around age 25. Early identification of these problems is a "must".

Let us consider these statistics in the light of other evidence concerning underachievement in the classroom, school dropouts, and juvenile delinquency.

Whether a child's vision problem is a simple refractive error, a perceptual vision problem, or some type of congenital or organic disease, his ability to learn will be impaired.

In his article, "Eye Findings in Children with Reading Difficulties," published in the Journal of Pediatric Ophthalmology (Vol. 3, No. 4), Robert V. Shearer, M.D., estimates that one child in four among the four million entering first grade each year has some difficulty in learning to read. Ninety-nine per cent (99%)

of those who fail first grade and 90% of those who fail second grade do so because of reading difficulties.

In addition to the psychological scars traceable to a child's sense of failure when he has to repeat a grade in school, there is a large and direct dollar cost to society for extra classroom space, additional faculty, and general supportive services necessary for operation of the nation's schools. In a publication describing the new National Reading Center, issued by the Office of the President in 1970, the annual costs incurred as a result of repeaters in grade and high schools is estimated at nearly two billion dollars.

According to the 1970 analysis prepared by the Division of Statistical Information and Studies, U.S. Department of Health, Education, and Welfare, National Center for Educational Statistics, 24.1% of the young people who should have graduated from high school in the 1968–69 class had dropped out before completing the 12th grade. The July 1970 publication describing the new National Reading Center stated that all of the 700,000 youngsters who drop out of school each year are two to three years behind their age group in reading skills.

The child who cannot see material placed on a blackboard or whose near-point visual function is impaired in such a manner that he cannot clearly and comfortably see reading material at the usual 12 to 20-inch distance at his desk, is obviously working at a great disadvantage. Too often, this inability to see well leads to failure in the classroom, dropping out of school, and consequent antisocial behavior.

Writing in the Family Weekly of August 30, 1964, F. R. Hilbert, Chief Psychologist at Sing Sing Prison in New York stated: "The White House Conference on Juvenile Delinquency bears out various prison studies of my own. Up to 80% of the delinquents and semi-delinquents studied by the Conference had learning difficulties, specifically in reading—and poor vision was found to be a contributing factor in 50 per cent of these cases."

Working with a faculty member from the University of Chattanooga, Tennessee, in 1965, Dr. David Dzik, an optometrist, examined 125 children whose cases of juvenile delinquency had been processed by the Hamilton County Juvenile Court in that city. A report of the findings states that 95% of those examined failed the reading and comprehension tests. In another group of 111 delinquent children tested in 1967, over 70% of them failed one or more of the vision screening tests, and 90% of them were from one to seven grades below their actual grade placement in school insofar as reading ability was concerned. This suggests a strong correlation between impaired vision and juvenile delinquency.

The cost to society of delinquent or criminal acts by young people is high, especially in terms of direct dollar outlays for apprehension, detention, prosecution, and rehabilitation. Such behavior is also costly in terms of the disruptive effect on the lives of the families of these young people. The involvement of young people in crime is especially tragic when it is realized that many of them might have progressed in a normal manner and made a positive contribution to society if they had been provided adequate vision care.

What is the current extent of school vision screening programs?

A complete and exacting overview of the vision screening programs throughout the United States is simply not possible at this time. The reason for this fact is that there is no effective reporting system for the agencies and individuals conducting such programs.

However, the 1973 Report of the National Study of Optometric Education, published by the National Commission on Accrediting, estimates that approximately 30 per cent of American children are being screened routinely for vision problems. The vast majority are screened only for distance acuity. Most of these screenings are done through schools, but a few are done through community organizations, each as Lions Clubs, and through programs initiated by students in schools of optometry. Screening for acuity only, with a Snellen chart, is insufficient, since it misses a variety of problems that do not show themselves as loss of acuity.

We suggest that due to the high dependence of a child upon effecive vision for his success in school and his future as a contributing citizen, the screening status quo is inadequate both in percentage reached and in problems screened.

Why is additional federal support needed for vision screening?

We agree with the observation by Congressman Rangel that vision screening for many children is theoretically covered under Medicaid's Early and Periodic Screening, Diagnosis and Treatment (EPSDT) program. At the same time, the

Medicaid program itself covers examination, diagnosis and treatment services, both optometric and medical, for vision conditions for low income families. However, EPSDT and Medicaid eligibility, services and implementation vary widely throughout the several states.

At the same time, there is a need for at least a vision screening program that is capable of touching all children in a ready-made setting—the school—regardless of financial status.

H.R. 4092 has the flexibility of utilizing the existing financial resources devoted to vision screening under EPSDT and constructing a screening program that reaches all children. At the same time, the bill offers an opportunity to dovetail follow-up examination, diagnosis and treatment services under Medicaid and other programs into a system that provides care for those whose economic status would otherwise discourage or preclude needed vision care.

What is the most effective method of accomplishing vision screening?

Ideally, screening is not the best of all worlds. We believe that periodic professional vision examinations are essential for prevention and detection of conditions of the vision system. However, due to cost factors it sometimes becomes necessary to identify those people who need vision care from those who probably do not need further vision care. This is where vision screening comes in.

Until recently, the technical process of screening was directed at detecting gross sight problems or those obviously limiting the individual. In the main, the procedures depended upon the use of the century old Snellen test. This test met the beginning needs of sight screening in the early 1900s. At that time, there were few trained persons who could work in sight screening activities. In those early days, the aim was to conduct a test that was simple and would find the worst of the problems. The Snellen test was used because it is simple to administer and did detect those who plainly could not see.

However, the Snellen test does not test for most of the disorders the young child suffers: hyperopia, astigmatism, cross-eye, wall-eye, color blindness, many eye pathologies, visual perceptual anomalies, depth perception, visual perception, and many other binocular dysfunctions and vision defects. The Orinda Study, published in 1958, compared a number of vision screening methods; the study concluded that for any of the categories of vision anomalies, a specific objective test, equal in sensitivity to that used clinically, must be performed. The study continued to describe an attenuated set of tests, exactly paralleling those used to determine treatment. These tests may be conducted very rapidly, even on very small children. The system advocated by the study, which sets a new era in high quality vision screening programs, evaluated refractive error, binocular dysfunctions, basic visual perception, and organic anomalies.

Many optometrists believe that a role of vision care is in guiding children in the developmental process of learning to see. Initially, this involves determining the child's total visual abilities—whether or not he can focus and point his eyes together as a team, his speed of perception, his accuracy in looking from one object to another, his power of sustaining focus at the reading distance, how he uses his eyes and hands together, and how well he performs other visual skills necessary within his school environment. Screening would cover not only sight-related evaluation for refractive error, binocular dysfunctions, basic visual perception, and organic anomalies but also the developmental aspects of visual skills.

H.R. 4092 offers the ability to perform screening using the experiences and best resources of all portions of the vision care community. Screening tests, criteria and personnel can be designed and trained to meet the varying needs of the several age groups and even individuals who would be covered by the bill:

SUGGESTED AMENDMENTS

In the spirit of perfecting the bill along the lines of its stated intent, the American Optometric Association recommends that serious consideration be given to making the following changes in the bill as introduced:

(1) In line 7 of page one, change "students" to "children". In lines 9 and 10 of page 2, change "schoolchildren" to "preschool children and schoolchildren". In line 16 of page 2, after "schools" insert "and preschool children". These changes will permit the program contemplated under this bill to reach preschool, including kindergarten, children for the earliest possible detection of vision problems.

(2) In line 14 of page 2, change "may" to "shall" in order to mandate, rather than permit, this program.

(3) In line 16 of page 2, change "give" to "be given"; and in line 20 of page 2, change "provide" to "be provided". These are technical tense corrections—

(4) In line 17 of page 2, strike out "annual" and insert "periodic", in order to provide flexibility in determining a testing schedule for various age groups.

(5) In line 25 of page 2, strike out "shall give priority to tests" and insert a colon; and on page 3 strike out lines one and 2 and insert the following language which is designed to assure maximum participation in government and private sector screening programs as well as dovetailing with EPSDT and Medicaid vision screening/care provisions:

"(1) Shall require that each child shall, on enrollment in the first grade, give evidence that he has received, within the prior year, the vision screening prescribed by the Secretary or an eye and vision examination performed by a doctor of medicine or optometry unless the child's parents or guardian have given written notice that they do not want their child to receive such vision screening;

"(2) Shall in the case of children eligible for services under the Early and Periodic Screening, Diagnosis and Treatment program (Title XIX of the Social Security Act), include optometric and ophthalmologic examination, diagnosis, and treatment services as a part of the state Medicaid plan and utilize such a plan for providing appropriate necessary follow-up services for said eligible children."

(6) On page 3, after line 8, insert the following language to further delineate the subject matter to be covered by the proposed standards:

"Such standards shall provide, among other things, that (1) a comprehensive vision screening technique, including sight and developmental testing, shall be used for the initial vision screening for each child, (2) follow-up screening shall be performed at regular intervals, (3) priority for screening and services shall be given to preschool children and children in the first six grades of elementary school, and (4) if a referral is required and no regular source of vision care can be identified, the child's parents or guardian shall be provided an informational list of appropriate sources of care including optometrists and ophthalmologists."

(7) Consideration should also be given to creating any additional administrative structures, such as a National Center for Vision Care, to administer the provisions of the bill.

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In summary, the American Optometric Association is in support of the concepts contained in H.R. 4092 and urges its favorable consideration by the Congress.

PREPARED STATEMENT OF LORANCE W. HARWOOD, O.D., CHIEF OF STAFF, CENTER CITY CLINIC, PENNSYLVANIA COLLEGE OF OPTOMETRY, PHILADELPHIA, PENNSYLVANIA

BACKGROUND AND NEED

The entire question of finding children with visual problems is not a new one. As early as the turn of the century regulations for some kind of vision test, mainly to detect those children with the most severe visual anomaly, were enacted in some far sighted schools. No doubt this was done by educators because of the obvious linkage between vision and learning capabilities. Intermittantly, over the following 50 years, groups attempted to study the question of effective vision screening in schools for children. This work was brought to some decisive conclusions by the mid 1950s. One of these conclusions was that vision screening programs must be broad in scope in order to be effective. A second conclusion was that vision itself may be viewed as more than a physical function. The simpler view would be to consider the act of vision as a chemical, mechaneal and/or physiological process which involves the entrance of light images into the eye causing a chemical activity in the retina and neural transmission of this information to the brain. A duplicate image of the objects in the environment is then received in the mind. A more complex view of the visual process would center itself on the resultant intelluctual or physical reactions by the whole individual as a result of the information derived through the visual process. One of the conclusions which may be drawn from the experiences in studies over the last 50 years is that the two views of vision are not in conflict but are actually expressing a first order and second order process. From the standpoint of vision screening that is an important deferentiation.

The second order process, that of cognitive intergration and action resulting from vision, is indeed a more complex and time consuming process and is only now becoming a reasonably conclusive art. This latter kind of vision is sometime viewed as a part of the learning process or when it is defective it is termed as a learning disorder.

I would like to address, for a moment, the most frequent anomalies of vision and then relate these to effective vision screening in schools. The most common sight anomalies are those involved in defocused images of the eye. These are called refractive errors and include myopia, astigmatism, etc. These conditions are known to effect the performance of a child in school. Another class of disorders involves the use of the two eyes together. These are called binocular disorders and are similarly known to effect the child's performance in school. The occurrence of other problems such as diseases of the eye are comparatively rare. For example, school vision screening programs designed to detect diseases of the eye and organic disorders, including mild eyelid irritations, found that only one half of one percent of the usual child population to have any such anomaly at the first grade level. Severe disorders are much less frequent than that, literally being one in a thousand or one in several thousand. If one extends that to view previously unknown severe medical disorders of the eye, it becomes a very few in ten thousand students.[1] This contrasted to the frequency of more common eye conditions such as refractive errors, binocular disorders, or combinations of these which at the first grade level would be approximately 16% of that population, suggesting that the first line of investigation or screening should be for these highly prevalent and educationally disturbing problems.

Indeed, effective mechanisms for detecting these kinds of problems are available to the professions in educational institutions at this time, having been thoroughly studied over a long period of years.[2] Effective vision screening is a proven and functional process with reasonably economical delivery systems and an effective follow-up process through the school environment.[3]

Once effectively identified, these vision anomalies can be pursued for treatment by the school health personnel who had intimate contact with both the student, the parent or family and the school environment in which the student studies. Optometric experiences indicate that in order to be effective, a screening program requires the steps just mentioned, that is, effective detection, collaboration with the school in their follow-up efforts for care, and communication with the school health team and educational environment of the school.

Just such programs have for many years been demonstrated in school districts of any description.[4] I would like to refer to screening experiences in California because they are large in size and long in duration. In that state, many school districts in rural farm areas, have found comprehensive school vision screening effective and productive. The basic plan and technology for these operations is known and proven. There must be, of course, some variations in the basic approach to meet specific conditions in certain districts, mainly for the geographical distribution of their populations. These variations are also proven methods. No new or exotic equivalent is needed at this time, only people to do the work.

The appreciation for these comprehensive school vision screening programs by the schools is apparent in these times where their funding is increasingly less. In schools where comprehensive programs are established, the tendency is to retain the vision screening program while forfeiting many other also-needed functions within their school districts when money must be conserved.

I would like to emphasize the point that effective vision screening programs are a reality and have proven themselves and are a viable resource of methodology and technology which may be used throughout the schools of the United States.

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[1] Harwood, Lorance W., "Interest Relationships for Test Used In School Screenings". Read before the American Academy of Optometry, New York, 1972.

[2] "School Vision Screening Reports". Reports from the Regional Council for Optometric Consultants for Schools, 7620 Auburn Boulevard, Citrus Heights, California 95610.

[3] American Optometric Association paper on "School Screening", prepared by the task force on school screenings, March 19, 1975.

[4] Reports on geographical differences in advance vision screening programs. Report from the Regional Council of Optometric Consultants for Schools, 7620 Auburn Boulevard, Citrus Heights, California 95610.

SPECIFIC PROVISIONS

We would like to comment on the proposal in the pending bill, H.R. 4092, allowing for funds to be allocated to schools for the purpose of effective school vision screening.

The proposal to make it feasible for schools to expand and/or continue their school vision screening programs is an essential matter at this time. It is highly advisable for the screening activities to occur in the school environment at the kindergarten entry point or at least by the first grade. Some agencies or interested parties would suggest that the kindergarten age is a late date to make preliminary evaluations of a child's vision. An earlier age would be most desirable. However, the effeciency of programs dedicated to the detection of vision anomalies in children before their entry in school is notably low. It appears that no matter how vigorous an outreach program may be, or how convenient the locations for preschool vision examinations are, most young children cannot be reached by this process. Adults and parents are frequently eluded into assuming that their child has normal vision because the child himself cannot appreciate his defect and make it known to the parent or supervising adult. This becomes quite evident when records of kindergartners or first graders are examined. It is not unusual to find severe functional vision problems among kindergartners or first graders that could have been recognized at a much earlier age. The lesson is that these children, while often having access to some kind of vision care or early detection program in their communities, have not been recognized by the programs attempted prior to the time they entered school. In order for a screening program to be effective, all children must be evaluated. The problem is a matter of logistics. In today's society the only place where all children can be reached is in the school environment.

In addition, the school is a highly desirable location in which to do broad scope vision procedures. Not only are the children present, but they are in suitable groupings and under the control of the classroom. The children can be prepared for the examining teams by the teachers who view the episode as a learning experience. It is further possible to see the children in rapid evaluation sequences in rooms familiar to them and with peers and teachers with whom they are familiar. Because of the friendly, controlled environment, the "no test" rate among these young children is dropped to an insignificantly low number. In addition, their apprehension about health-related evaluations is reduced.

Another powerful advantage of the evaluation being done in the school is that the results are immediately appreciable by persons most concerned with this child. The teacher and school nurse may be immediately apprised of the child's visual condition and of any potential deleterious effects on his learning capabilities. Required adjustments to the child's environment may be made immediately and with the full undertsanding of those who come in contact with him without the necessity of the information fumbling through several hands before reaching the child's teacher.

Another argument for having a comprehensive vision program in the school is the economics involved. Effective broad scope vision evaluation can be conducted in the school by professionally trained, sometimes licensed personnel, with extreme economic efficiency. This can be readily appreciated when it can be noted that one examiner may evaluate each child for refractive error, binocular conditions, and abnormal structural integrity of the eye, and conduct examinations for pathology, visual acuity and color vision testing at the rate of more than one hundred kindergartenage children in one day. The reason for this high efficiency is that the child is made readily available to the examiner in an environment which causes a very small loss of time. In addition, the auxiliary school personnel, teachers, aides and volunteer school agencies contribute to the efficiency of the program by helping in the procedure. This volunteer aspect is more easily attained in the school because of the dedication of community people towards the school function where their children attend.

The entire cost of these evaluations and subsequent reports in current programs is less than three dollars per child. The administration of large school vision screening programs using professional or licensed personnel is sometimes handled by the intermediate school body or by public service foundations.[5]

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[5] The California Optometric Care Foundation, 921 11th Street, Sacramento, California 95814.

All this service may be done without any appreciable disturbance to the educational program. One additional bonus to the school is the beneficial relationship between the professional examiners and the schools they serve. Often a real camaraderie results to the benefit of the children.

To summarize, we applaud the committee's concern for the visual welfare of our school children. What is needed is well planned action. The problem is understood, the technology present, and the economics proven. No new studies need to be done, no pilot projects are required or even desirable. What can be done now is to do all over the U.S. what is done for a quarter of a million California students. The schools will, I am sure, respond as well interested, knowledgeable professional persons when the technology is made known and the funds for action are made available to the schools.

Dr. YAMAMOTO. As a panel, this morning we would like to make some brief opening comments, which at the conclusion, we hope we can answer any questions you or members of the subcommittee may have.

The presentations will be split up into two areas, one concerning the need for visual screening as far as financial and manpower resources, and the second part of the statement, presented by Dr. Harwood, will cover the state of the art or where the profession is in providing visual screening services.

So at this time I would like to present Dr. Jerry Jolley.

Mr. LEHMAN. Thank you.

I am going to step aside for about 2 minutes. Mr. Goodling will chair for that time.

Dr. JOLLEY. I first would like to thank the committee for the opportunity to voice my very strong support of H.R. 4092, establishing the National Comprehensive Vision Care Act of 1975.

Thoughout the past 4 years I have had the opportunity to work with a variety of community groups, health departments, and school administrators in both Los Angeles County and in New York City in the development of visual screening programs and eye care clinics.

I can say without qualification that there exists a very critical need at the local level for a national comprehensive care program which will both focus and coordinate resources on the early detection and treatment of vision problems of this Nation's children.

It has been clearly established that impaired vision in children can seriously impede learning and contribute to the development of emotional and behavioral problems. Yet in spite of our knowledge of this fact, and in spite of the current sophistication of technology that we have in this country to deal with visual problems, there are still many thousands of youngsters sitting in class rooms this morning whose ability to learn is somehow being hampered by very subtle and undetected vision problems.

The teachers who are actually on the firing line are the first ones to point out to me that there is a need for a comprehensive vision screening and followup program to identify and help those children in their classrooms with visual problems. It is because of this very real and very critical need for such services early in the child's life that I urge Congress to act favorably on H.R. 4092.

Unlike adults, children with visual problems are often unaware of their handicap and do not complain or seek help. The majority of visual problems do not create pain or physical discomfort and it is very easy for the untrained observer to assume that no visual problems exist even though serious refractive, organic or eye-coordination problems are making learning difficult for the child.

Without a doubt, it is our responsibility to focus resources on detection of these very subtle problems through organized periodic screening programs; visual screening cannot replace the professional examination, but properly organized and comprehensive screening programs have been proven to be highly effective in identifying children in need of professional care.

The universal problem is lack of resources and lack of coordination of existing resources. The National Comprehensive Vision Care Act must seek to coordinate resources as well as to properly train, and I am glad a provision exists for that, for the training of screening personnel.

Currently the system is very fragmented with health departments, school systems, and a variety of other agencies trying to do the job of vision screening, and all too frequently with inadequately trained personnel. For example, in certain sections of Los Angeles County, audiometric nurses have been delegated the authority, in some cases against their better judgment, to be responsible for the vision screening as well. And they have been delegated this authority sometimes without proper background and training.

Until proper resources can be developed to coordinate screening activities and to assure comprehensive rather than cursory screening, many children will be forced to fight their way through school and to try to overcome visual problems in addition to navigate the educational system.

In my opinion, the most important fact spoken to by the H.R. 4092 legislation is that it recognizes the need for not only comprehensiveness in establishing vision screening procedures, but in also creating "appropriate followup services."

What is certainly not needed in this country, especially in many disadvantaged and minority areas, is a system which identifies visual problems of children without developing adequate resources to assure that the problems are properly treated. Such programs only ceate frustration in the minds of the people who receive them, and unless the identification phase of a vision screening program is closely paralled by allocation of resources to develop the necessary diagnostic and therapy services, then the vision screening program is not as valuable as it could be.

Again thank you for the opportunity to speak in behalf of H.R. 4092; certainly a critical need does exist for adoption of this legislation, and if I can be of any help in answering questions later, I would like to do so.

I will now turn the floor over to my colleague, Dr. Harwood.

Dr. Harwood. I would like to make my statements rather pointed in that I believe the committee, Mr. Chairman, will hear many comments about the need for this legislation, and equal numbers of comments about the manner in which the need is already being fulfilled.

I would like to point to just a few factors as directly as I can.

The fact is that the need is not being fulfilled. Part of the reason is that the idea of comprehensive screening has not yet been established over the country. One of the lessons we have had in the past 100 years or so of worrying about vision of school children, which has been substantiated by very effective research, is that the vision process is a complicated one.

Single one-stop detection systems such as the Snellen chart screening, often given the first four grades in the elementary sequence, is simply inadequate to find children who have vision problems, to say nothing about identifying the nature or severity of that problem. It is an effective test for one malady, myopia. There are, as has been stated or suggested just in the previous comments by various people, an effort by numerous groups and agencies to attempt to deliver screening programs. The school districts usually do this to the best of their ability.

However, vision screening programs and those for hearing and some other health-related important aspects of the child's ability are often relegated to the back seat when the pressure for funds is on, as is the case now.

The fact that the existing programs, many of them federally funded, do not reach them, can be substantiated by simply asking the question. I would suggest that perhaps the committee might like to select 10 or 15 towns over the United States by even the dart board method, throwing darts at a map of this country; call up those districts and say, how much do the existing Federal programs help you in detecting the children in your school who have vision problems?

The nearly uniform answer will be, unless you are very lucky with your darts, essentially none; we have to do it ourselves and we do it with whoever we have available, the school nurse if they are lucky. Many States do not even provide funds for school nurses.

The second issue that I would like to make specific point of is that the technology exists. We do not need to devise new methods for broad scope and effective early detection programs. We have 15 years of very useful experience in the California sector with about a quarter of a million people a year, wherein broad scope, effective screening programs exist in all categories of schools, city schools, core or ghetto areas, rural areas, mountains, et cetera.

I think we can draw from this technology and find very quickly an effective program can be established if only one agency will deal with it for all the people, not only those who are economically deprived, such as those who might be reached if the early and periodic program were indeed effective.

I think we will find that program is ineffective at this time. The technology exists. We do not need to start from scratch. Just deal with the people who do it now. I think the bill is very well conceived. I would like to render my own support to it.

I think I can speak for thousands of school administrators. It is indeed the educational system that will benefit, and their children, from this kind of legislation. If you have any doubt about the need for vision care in this country, let me cite one final example.

Only in the last few weeks in my clinic in the city center at Philadelphia, we have given a public screening. Our problem was that too many children wanted to come and we had to postpone seeing them for weeks. Nursery schools, Head Start groups, preschool groups, school groups, called up and said, can we come? To me that was an indication that even in this sector, where there are other advanced programs, the screening need was not being met.

If I can support any ideas by answering the questions, I would be glad to do so.

Thank you for this opportunity to speak to you today.

Dr. YAMAMOTO. In closing our panel discussion this morning, we would like to have you turn to page 8 of the statement submitted by Dr. Jolley on behalf of the association. There you will find a list of specific amendments that we would like to see made to H.R. 4092.

There are four specific amendments that I would like to, at this point, bring into sharper focus for you. The first one is that there needs to be greater coordination at the Federal, State, and local levels concerning the funding, and also the provision of manpower to carry out vision screening programs.

The second area would be in the section that we would like to see created, where special project grant authority would be added to H.R. 4092. It would be to develop new techniques and also training existing personnel in the field of vision screening, and hopefully improve the competency, or the current level of competency, for this group.

The third specific amendment we would like to see made to the bill would be the creation of a national center for vision care. The purpose of the center would be to provide essentially a repository for data and information collected across the country. It would also be a place where local school districts, or public health departments, or whatever group at the local level is conducting the vision screening programs, could turn to for technical and professional advice.

Another mission or objective of the national center for vision care could be that they would look, or at least examine the possibility of establishing national minimum standards as far as what should be constituted in a vision screening program.

The fourth is a money question, Mr. Chairman. We noticed in the bill there was no authorization for appropriations within the bill. Hopefully the subcommittee will take upon themselves to review the costs and put some kind of dollar mark on the H.R. 4092 bill.

In conclusion, Mr. Chairman, the American Optometric Association supports in concept the general provisions of H.R. 4092. We feel that there are presently limited resources to accomplish the goals set by Congressman Rangel. This bill, or a bill redrafted by the subcommittee, may give the proper visibility to the importance of vision screening programs. Fragmented as they appear to be, it can be documented that the cost-effective ratio tips in the opposite direction.

Mr. Chairman, if you or any of the subcommittee members have any questions, we would be more than happy to respond. Again, thank you for this opportunity to present the views and opinions of the American Optometric Association.

Mr. LEHMAN. Thank you, gentlemen.

I have just one brief comment.

Now if this examination is not going to be a one-shot deal, then that is it, because from my own experience I know I could read the blackboard very well in the first grade and could not see a thing on the blackboard by the third grade.

My youngest child had a nearsightedness that rapidly deteriorated through late grammar school into junior high school. What he needed in the third grade was not the kind of help he needed in the seventh or eighth grade.

I wonder about the logistics or the mechanics of being able to stay on top of these problems that do change from time to time, especially in the early and middle childhood years.

Dr. **Harwood.** The technology exists. In the last 15 years, in working in a very large school system on a repetitive basis, we have established exxactly what that frequency should be and what the nature of the examination should be from one period to the next period. The problem is, this is not being done nationwide.

Mr. **Lehman.** You can always diagnose and anticipate the frequency of the followup examination? Not as to every child, but certainly most of the children?

Dr. **Harwood.** Even to the borderline case. In most cases we could identify the person you should see the very next year instead of the following year. In order to be cost-effective, you should not examine every child everywhere.

Mr. **Lehman.** Mr. Goodling?

Mr. **Goodling.** Dr. Harwood, are you saying, since the physical exams in the State of Pennsylvania are done by doctors in the schools and it is mandated, and the dental examinations are done by dentists and it is mandated, and the eye examinations are mandated but not always done by optometrists, that we should follow in the same order, optometrists should do all of the eye examinations?

Dr. **Harwood.** At the level of the present state of the art, because of the complexity of the broad scope, that seems to be a necessity, or somebody with a specific training and licensure is the way the license laws are created in the State of Pennsylvania to deal with the question of retractive area effectively.

There are several phases of vision. One is the establishment of the refractive area, the problem that your child had. It seems until the mechanical technology is available to very effectively determine not only its principles but its magnitude, thus speaking to the need for care, the urgency of the care, that seems to be the most sophisticated and best way to go at that. It turns out if you look at the California experience, the broad scope screening done by trained professionals is also the least expensive, as to its effectiveness.

Mr. **Goodling.** The second question I would ask is, as doctors, do you have any reservations about the part that the Federal Government should play in this field? You realize of course that when the Federal Government becomes involved there is no such thing as your putting out one hand this way [indicating] and the other hand this way because if you put yours out that way, we seem to come in that way.

Do you have any reservations as medical people in relationship to involvement of the Federal Government?

Dr. **Jolley.** My response would be "On the contrary, I feel there has to be intervention at a high level in order to coordinate the various resources that are currently in operation, in trying to do screenings a the local level, and also to bring in new resources that are very necessary to expand and make the program more comprehensive."

Mr. **Goodling.** My third question: You mentioned there was no amount in the Rangel bill. I am sure you peope must have some amount that you are thinking of.

Dr. **Yamamoto.** No; we do not, not at this time.

Mr. **Goodling.** I have no further questions.

Mr. **Lehman**. Thank you.

Mr. **Simon**. Thank you, Mr. Chairman.

My question follows along the line of Mr. Goodling's.

This is always a problem for us. Where does the Federal Government have to step in, where are States falling down in their responsibilities? Have you given up at the State level?

It just is not practical, is it, to get States to move? I am curious as to your response.

Dr. **Harwood**. No; I would never give up at the State level, in fact I would never give up at the local district board level. The fact is that education is being recognized as a more and more expensive game all the time.

As one recent director of education at the State level made the comment, "I want to tell you about school financing. First off, it is impossible." I think he is a bit correct. The problem really is allocating the priorities and funds. Until the States find a way to adequately finance their schools, I think the Federal Government is going to have to become involved in order to insure that the population, particularly from the health standpoint, is provided for, at least identified in the way our state of the art can allow us to do.

Mr. **Simon**. We are faced with this very practical situation, that many States are in a much better financial situation than the Federal Government. West Virginia, for example, I heard just yesterday has a $200 million surplus at this point. So there is a funding question, and there is also the very fundamental question: How far does the Federal Government go in intervening in an area that maybe should be left to the States?

Dr. **Yamamoto**. Not to pick on either local government, the school district, the State, or the Federal Government, the problems we had in the State of Oregon in trying to establish screening programs were that the funds and the authorizing legislation were there, it was just that it was kind of a hide-and-seek situation, where you would have to go seek these financial resources out. If at some level we could get some coordination or at least have some common ground where people from the Migrant Health Centers, from EPSDT, title I, you can go right on down the line, all the programs that have funds available for visual screening, if they could get together, then I am sure a very good screening program could be implemented at the frontline level.

I think this is part of the problem that we are trying to bear upon right now, in that they are available, but to try to find them is another problem, a whole new problem.

Dr. **Harwood**. I would like to add to that. Much of those funds are tied up in broad-scope programs. HEW programs, for example, involve a rather large package. Somehow vision is always ending up the loser on that sequence, seemingly. The least possible test is very often the one that is done, and it is not adequate.

So the school ends up still saying, "We do not have everybody evaluated in our program." We do not know if our reading teacher is bucking her head up against the wall because we do not know whether the child who is doing poorly is either dumb, slow, or has some special medical problem. It seems that vision and certain other things—hearing is another one—really can be dealt with like a line item, as a separate thing. It is very effectively looked after, it is very fast, and fits right into the educational sequence.

Mr. SIMON. I hasten to add that I am sympathetic. I had the experience in the fourth grade of being moved from near the blackboard to the other end of the room, and all of a sudden I could not read those figures on the blackboard.

Dr. HARWOOD. Can I tune into you just a second?

You were lucky because you got moved back and the blackboard disappeared and you recognized a problem. The rest of the vision problems are not nearly so easy to find. You could have been discovered by the Snellen chart test, but the rest of them are dropped right out of sight. The word in this bill that impresses me is the word "comprehensive," to find the person whose two eyes do not work together, who has an astigmatism that allows him to pick out something on the blackboard from anywhere in the room, or who has a defect that is hard to detect; that is the person we are really after at this time.

Mr. SIMON. Right. Then one final remark.

I do not think that before at least I can vote on this, I would have to have some kind of a cost factor here. I think that is essential before we get to that final point of voting.

I appreciate your testimony.

I have no further questions, Mr. Chairman.

Mr. LEHMAN. Mr. Jeffords?

Mr. JEFFORDS. As I understand from my contemporaries here, you have not been able to provide cost data. I am curious about your feelings as to who ought to pay for such a program with respect to income levels. I know my children's eyes were tested early in grammar school, and I certainly do not feel I would want the Federal Government to pay for that.

Do you think it would be appropriate or it would add too much complexity to such a screening process to have an income level type determination on the eligibility for free screening?

Dr. HARWOOD. I think it would be if the program is to be effective. It is not that I think the Federal Government ought to do for you what you can do for yourself; it is a matter of logistics. If you are going to find everybody with the defect, you have to do it in the place where they are. It is very difficult to determine who really is able to take care of that problem this year or this month.

For example, the first grade level suggested in this bill, while many would suggest that is very late, it is actually a good time from the standpoint that all the children in the United States who are 6 years old are in the first grade then. You can look at all of them very inexpensively, and with expediency, and with comprehensiveness.

I think that if you try to turn that into a self-pay system, it becomes bogged down.

Incidentally, many schools do not use the early and periodic screening test funds. It is more costly to find those funds and apply them through the State funds than it is to forget them and try to do it themselves.

Now, as to the cost. The American Optometric Association could very shortly give you exact figures as to what it would cost to examine every child in the United States, once or numerous times, with trained professionals and later using less skilled personnel more available to the school systems.

The nature of the test does not have to be the same at each period through the time. Those figures are quite available and, if somebody wants to ask us, we would be glad to give them to you.

Dr. YAMAMOTO. We will supply them for the record.

Mr. LEHMAN. One final question.

In order to avoid anything in the nature of conflict of interest, how would you work the legislation so that the optometrist who performs the test cannot be in a position where, every time they find a child who needs glasses, he will try to influence the sale of a pair of glasses from fellow optometrists? This is rather crude, but nevertheless, the public reacts in that kind of way.

I think the legislation should be self-protective in that way.

Dr. HARWOOD. I would be glad to respond to that, Mr. Chairman.

That is always a danger, there is dishonesty no matter where you may be. This is one of the dangers very successfully combated in what I refer to as the California experience, where comprehensive screening has gone on for so many years.

The item is very simple: that is, if the professional examiner is used, he simply cannot do this work in the area where, if he is a private practitioner, in private practice, has influence.

In addition to that, the authority for the selection of the agency, the group, or the individual, should lie with the school, I believe, or similar agency, if it is a preschool thing, recognizing that at any moment they can cut that program off and do it with one who will not be responsive to self-motivation.

Mr. LEHMAN. Thank you.

Mr. GOODLING. I have one additional question.

We always say a little information can be very dangerous. In the last 5 or 6 years I was in the school business, dyslexia was cited frequently as a possible problem with almost every youngster who was having any type of learning difficulty. Would dyslexia be picked up in the type screening that you are talking about?

Dr. HARWOOD. That I am talking about? It depends on how the screening is designed.

My colleague Dr. Jolley will speak to this.

Dr. JOLLEY. There are various models of screening that can be adopted. The type of model Dr. Harwood referred to, the modified clinical technique, would not identify those youngsters who are victims of dyslexia.

There are additions to that basic screening battery of tests that can be added to identify, if not the dyslexia, at least those who are potentially having learning disorders resulting from visual problems.

Mr. LEHMAN. You would not suggest that would be in the initial screening?

Dr. JOLLEY. I personally would not, sir, I personally would not.

Mr. LEHMAN. Again, thank you, gentlemen, for taking your time to come from all parts of the country to bring us this kind of information.

We have another panel now that we seem to be pretty well on schedule for.

Mr. Dale Sopper and Mr. James Dickson, both of whom come from the Department of Health, Education, and Welfare.

Take our greetings back to Dr. Mathews and tell him we will work with him all we can.

The principal witness I guess is now Dr. James Dickson, accompanied by Dr. Van Hoek, Dr. Alford, Mrs. Beatrice Moore, and Mr. Dale Sopper, whom I have already mentioned.

Without objection, your full statement will be in the record.

[Prepared statement of Dr. Dickson follows:]

Prepared Statement By James F. Dickson, III, M.D., Acting Deputy Assistant Secretary for Health; Department of Health, Education, and Welfare

Mr. Chairman and Members of the Subcommittee: I am pleased to appear before you today and to present our views on H.R. 4092, a bill which would establish a program of grants to States, for the support of programs of vision screening for children and necessary follow up treatment services primarily for students in the first six grades of elementary school. I also will review the child-screening activities of the Department.

The Department fully understands and supports the need for child screening and treatment, not only for vision but for a complete range of potential child-health problems.

However, I wish to state at the outset that we are strongly opposed to H.R. 4092. The Department of Health, Education, and Welfare already has at least 15 separate programs brough which vision screening and treatment are provided for children. H.R. 4092 is undesirable primarily because it would create still another new categorical program and would significantly increase the Federal role in supporting health activities for individuals who generally do not require financial assistance to obtain needed health care. Moreover, for those individuals currently eligible for a variety of Departmental programs which support vision screening, this proposal would duplicate already ongoing efforts and would compete with ongoing successful programs.

H.R. 4092 would single out one class of recipients, public school children, for receipt of these categorical services. However, there is no evidence that financial barriers generally prevent public school children from receiving needed vision care. Moreover. We are not convinced that public school children have more serious vision care problems than private or parochial school children or other members of the general public; nor are we convinced that vision care is more urgently needed by children than other types of medical care. Such an approach—categorical grants for a single health concern—would isolate this one handicapping condition and negate the comprehensive health care objectives of the Department.

Further, the passage of H.R. 4092 would create administrative problems with resulting inefficiencies among current Departmental programs such as the Maternal and Child Health and Crippled Children's Services Programs and the Early and Periodic Screening, Diagnosis and Treatment Program (EPSDT). Legislation which would provide for activities already provided under numerous other legislative authorities would duplicate administrative costs at the Federal, State and local levels and would cause considerable confusion for State and local program administrators.

Let me begin this presentation by describing various ways in which screening can be accomplished. This will be followed by a discussion of the many DHEW programs which carry out comprehensive health programs for children.

Child-health screening can be accomplished through mass public information and community organization techniques which attempt to attract a large number of the population group to be screened to a central point where they are checked for a limited number of conditions. Screening can also be accomplished by going to the site where there are normally a large number of the population group to be screened as, for example, to schools to screen students as is implied in H.R. 4092.

Both of these methods of operation are effective to some degree. However, both also have basic limitations. In many instances, only one, or a limited number of health conditions are selected for screening, oftentimes no medical history is taken, the time available for screening is ordinarily limited and inadequate and no continuing relationship for future diagnosis and treatment is normally established. Very often, as in the case of mass screening programs for school children, the facilities for providing any needed care are located at a site different from where the screening is performed. This requires procedures for referral and arrangements for treatment and should include appropriate follow-up procedures—none of which are frequently associated with mass screening techniques.

A third method of screening, a method which is preferable from our viewpoint and the viewpoint of many other physicians and health care personnel, is to check for various childhood disorders as part of a routine health examination provided at a facility with health services delivery capacity, and in the context of a continuing program of health maintenance. There should also be a provision for the payment for such services when the person needing care is unable to pay.

The Department has attempted to focus its screening activities in terms of this latter context to accomplish a broad range of child-screening as a part of a comprehensive program of health maintenance for the children who are eligible for DHEW supported programs. As I have indicated, there are various authorities which we use for these programs under the Public Health Service Act, Title V and Title XIX of the Social Security Act, various education authorities and others.

PUBLIC HEALTH SERVICE PROGRAMS

Let me briefly describe some of the ongoing programs of child screening and care, including vision services, now being carried out through the Department. The Public Health Service's Health Services Administration supports various projects for screening children and providing care in a comprehensive setting through the Community Health Centers Program, Migrant Health activities, Indian Health Service, National Health Service Corps, Health Maintenance Organizations, Maternal and Child Health Program, and through comprehensive public health service grants to States.

The Community Health Centers program authorized by section 330 of the PHS Act provides ambulatory comprehensive care in 157 medically underserved areas. In 1975, it is estimated that nearly 500,000 children received services through CHCs. These children had access to a full range of health services including medical, laboratory, mental health, dental, physical or speech therapy, social services, and hospitalization. Under the new legislation authorizing the Community Health Services program, P.L. 94–63, primary health services which a center must offer must include preventive health services, including children's vision and hearing correction and well-child services. In addition, physician, preventive dental, diagnostic laboratory and radiologic, emergency medical, and transportation services must be offered.

Migrant Health projects authorized by section 319 of the PHS Act provide to children of migrant and seasonal farm workers a wide range of health services such as those included in Community Health Centers to areas with high concentrations of migrants throughout the country. There are presently 105 sites in 33 States and the D.C. In addition, the Indian Health Service provides direct health services to both Indian and Alaska Natives through a network of 51 hospitals, 99 health centers, and 300 health stations in 25 States. The Indian Health Service expects to provide eye care to approximately 64,000 persons during FY 1976, many of whom are children.

A significant portion of the Public Health Services' formula grants to States for comprehensive health services authorized by section 314(d) of the PHS Act is used for the provision of medical, dental and related health services to mothers and children.

The National Health Service Corps, authorized by section 329 of the PHS Act has over 270 National Health Service Corps sites providing increased access to physician services and other medical services for families who live in medically underserved areas. In addition, Health Maintenance Organizations supported by the Department are required to offer as a basic service, childrens' eye examinations to determine the need for correction, and as a supplemental service that vision care not included as a basic service.

The Maternal and Child Health Program authorized by Title V of the Social Security Act and administered by the Health Services Administration provides support for States to develop and maintain the capacity to provide a variety of preventive, diagnostic, treatment and health maintenance services to mothers and children including special services for crippled children. Maternal and Child Health and Crippled Children's Services Programs provide a wide variety of health care and services in accordance with the plans of the 50 States, the District of Columbia, and the territories, and virtually all State maternal and child health agencies provide physician directed well-child conferences. These conferences or clinics use various health care specialists to conduct periodic assessments of the way children are developing, screen for conditions that may require medical intervention, and to maintain an appropriate level of immunization. Additionally, services include multidisciplinary and specialty clinics that provide screening, consultation, diagnosis, treatment and follow-up care for sick children for such conditions as congenital heart disease and hearing and vision impairments. As examples of the magnitude of care provided under these programs in FY 1975, there were 568,000 children registered for comprehensive services in the 56 health jurisdictions, nearly 1,000,000 children receiving dental care and 1,805,000 children attending well-child conferences.

Regarding preventive health services in Maternal and Child Health programs, immunizations were provided to over 3,000,000 children for polio, rubella and diphtheria. There were also an estimated 3,300,000 children screened for dental care and 6,600,000 children screened for hearing and over 9,800,000 screened for vision. This means 1 school-aged child in 6 is screened for vision under Maternal and Child Health programs. In addition, Maternal and Child Health and Crippled Children's Services Programs provide a resource for States to use for carrying out their responsibilities for screening under the EPSDT program of the Medical Services Administration. Many of the Maternal and Child Health and Crippled Children's programs have contracts or working agreements to perform EPSDT screening for State Medicaid agencies. Also, many children who are screened under State EPSDT programs are referred to Maternal and Child Health and Crippled Childrens programs for necessary treatment and follow-up care.

Maternal and Child Health and Crippled Children's Services screening visits are available to all children in the area served at all income levels.

SOCIAL AND REHABILITATION SERVICE PROGRAMS

In addition to directly supported services delivery projects the Department has other programs for vision screening and care for persons unable to pay. For instance, low income families who cannot afford to pay for health care may be eligible for assistance under State Medicaid programs for vision and other services.

The Early and Periodic Screening, Diagnosis Treatment Program (EPSDT) under the Medical Services Administration of the Social and Rehabilitation Service is one of the Department's major child health programs. The purpose of EPSDT is to identify and treat handicapping or potentially handicapping conditions early, before they become severe or irreversible problems, endangering the child's future health and well being and also before they become more costly to treat. Under the law, States must make provision in their Medicaid plans for providing or arranging periodic health screening for all eligible children under 21 and for follow-up treatment of conditions discovered through screening.

The Department's EPSDT regulations require States to:

1. establish administrative mechanisms to identify screening and diagnostic facilities and to make these available to eligible individuals under age 21;
2. identify all eligible individuals and ensure that they are informed of such services and where and how they can be obtained;
3. establish agreements to assure maximum utilization of existing screening diagnostic and treatment services provided by other public and voluntary agencies; and
4. provide early and periodic screening and diagnosis followed by appropriate treatment for visual, hearing and most dental problems plus whatever other treatment is included in the State's plan.

Between February 1972 and June 1975, 3,052,156 of approximately 13,000,000 eligible children utilized the services provided under EPSDT. At present about 10 percent of EPSDT referrals are for vision problems. The Department is placing high priority on assisting States to implement effective EPSDT programs.

HEAD START

Turning now to the health services component of the Head Start program administered by the Office of Child Development, I shall begin by indicating the program's general health objectives:

To provide a comprehensive health services program which includes a broad range of medical, dental, mental health and nutrition services to preschool children, including handicapped children, to assist the child's physical, emotional, cognitive and social development toward the overall goal of social competence;

To promote preventive health services and early intervention;

To provide the child's family with the necessary skills and insight and otherwise attempt to link the family to an ongoing health care system to ensure that the child continues to receive comprehensive health care even after leaving the Head Start program.

The health services component of Head Start (medical, dental, nutrition and mental health) provides that for each child enrolled in the Head Start program, a complete medical, dental, and developmental history will be obtained and recorded, a thorough health screening will be given, and medical and dental examinations will be performed. These services were provided to approximately 350,000 preschool children in Head Start in 1974.

HEALTH SERVICES IN THE SCHOOL SYSTEM

It might be helpful to you and the Subcommittee for me to briefly discuss the screening processes that are usually provided in schools across the country. Many schools, particularly in the more affluent school districts, provide a fairly comprehensive screening program for eye, ear, speech, and dental difficulties of all entering kindergarten or first grade classes. The eye and ear screening processes are usually carried out by volunteer parents and teachers working under the supervision of a school nurse. Where follow-up services are required as a result of the screening tests, parents are notified and the necessary professional assistance is sought by the parents. In cases where parents are financially unable or unwilling to provide for the necessary follow-up services many schools will seek other means of obtaining the services for children in need. I have discussed some of these sources elsewhere in this testimony.

Obviously, in school systems that are financially strapped, it is not as easy to arrange for the diagnostic and treatment programs as it is in the more affluent school districts. However, several already enacted programs of the Federal government in the field of education can and do assist these districts in providing the desired services. For example this year the Title I program of the Elementary and Secondary Education Act will provide $1.9 billion for services to the educationally disadvantaged youngsters across the country. Health and related services are eligible for support under this program. Because of the Title I formula, a major portion of the funds flow into school distrits where there is a large concentration of economically disadvantaged students. Therefore, in general, the school districts which have the maximum need for financial assistance stand to benefit the most under the Title I program. Other federally funded programs under which health services are eligible for receiving financial support are: Title III of the Elementary and Secondary Education Act (Supplementary Educational Centers and Services), Title VII (Bilingual Education): Title VIII of the same Act (Health and Nutrition, and Dropout Prevention Programs): the Follow Through Program (a program to continue the Head Start activities): and Education of the Handicapped Act.

While our report systems for these programs are not sufficiently refined to give the number of students served nor the amounts expended solely for services associated with the correction of vision difficulties; we do have approximate information for a recent year as to the number of students receiving health care, and the Federal dollars expended. General health services would incorporate those normally provided in diagnosing and treating children with vision difficulties.

The following is a summary report of the estimated number of students served and the federally appropriated dollars expended in the category of health services for FY 1973 uner the education programs previously enumerated.

	Program								
	Total	Migrant	Low income	Title III	Title VII	Title VIII	Follow Through	Education of Handicapped	Emergency school aid
Federal expenditure	$27,891,000	$2,189,000	$22,764,000	$225,000	$25,000	$148,000	$2,400,000	$110,000	$30,000
Students served	2,064,900	162,000	1,686,000	16,000	1,800	10,900	178,000	8,000	2,200

CONCLUSION

In conclusion, Mr. Chairman, we urge that H.R. 4092 not be enacted in light of the serious deficiencies in the nature and scope of the screening program proposed in the bill—because it would expand the Federal role for health beyond those in greatest need; because it would tend to duplicate some of the vision care aspects of existing programs such as Maternal and Child Health and EPSDT; and because its categorical approach would negate the comprehensive health care objectives of the Department.

Thank you very much Mr. Chairman. I greatly appreciate your invitation to share with you the Department's position on H.R. 4092. My colleagues and I would be pleased to try to answer any questions you or members of the Subcommittee may have.

STATEMENT OF DR. JAMES F. DICKSON III, ACTING DEPUTY ASSISTANT SECRETARY FOR HEALTH, DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE, ACCOMPANIED BY DR. ALBERT L. ALFORD, ASSISTANT COMMISSIONER FOR LEGISLATION, OFFICE OF EDUCATION, DHEW; BEATRICE MOORE, DIRECTOR, EARLY PERIODIC SCREENING, DIAGNOSIS, AND TREATMENT PROGRAM, MEDICAL SERVICES ADMINISTRATION, SOCIAL AND REHABILITATION SERVICE, DHEW; DALE SOPPER, ACTING DEPUTY ASSISTANT SECRETARY FOR LEGISLATION (HEALTH), AND DR. MURIEL KAISER, NATIONAL EYE INSTITUTE

Dr. DICKSON. Thank you.

Mr. Chairman and members of the subcommittee, as you have suggested, I will briefly summarize our testimony.

I would like to say first that the Department has a very positive stance and attitude with respect to the need for vision screening for school children and also for preschool children.

However, the Department opposes H.R. 4092 for the following five reasons:

No. 1: The Department already has at least 15 separate programs through which vision screening treatment is provided for children.

H.R. 4092 would create still another new categorical program.

No. 2: It would significantly increase the Federal role in supporting health activities for individuals who generally do not require financial assistance to obtain needed health care.

No. 3: There is no evidence that financial barriers generally prevent public school children from receiving needed visual care. Moreover, we are not convinced that public school children have more serious vision care problems than private or parochial school children or other members of the general public.

No. 4: We are not convinced that vision care is more urgently needed by children than other types of medical care. This categorical grant approach would negate the comprehensive health care objectives of the Department.

No. 5: The passage of H.R. 4092 would create administrative problems with resulting inefficiencies among current departmental programs, because it would duplicate administrative costs at the Federal, State, and local levels, and because it would cause considerable confusion for State and local program administrators.

A further point which is important is the following:

The method of screening which is preferable from our viewpoint is to check for various childhood disorders as part of a routine health examination provided at a facility with health services delivery capacity and in the context of a continuing program of health maintenance.

The public health Service programs of child screening and care, including vision services now being carried out through the Department, include the following: the community health center program; the migrant health project; Indian health services program; the Public Health Service formula grants to the States for comprehensive health services; the National Health Service Corps; health maintenance organizations; and the maternal and child health and crippled children services programs.

In regard to preventive services in general, and specifically with respect to vision difficulties, I might note that immunization was provided to over 3 million children in 1975; 3,300,000 children were screened for dental care; 6,600,000 children were screened for hearing; and over 9,800,000 were screened for vision.

As to our social and rehabilitation service programs, low-income families who cannot afford to pay for health care may be eligible for assistance under State medicaid programs for vision and for other services.

The early and periodic screening, diagnosis and treatment program identifies and treats handicapping or potentially handicapping conditions early, before they become severe or irreversible problems, endangering the child's future health and well-being and also before they become more costly to treat.

States must make provision in their medicaid plans for providing or arranging periodic health screening for all eligible children under 21 and for followup treatment of conditions discovered through screening.

Between February 1972 and June 1975, 3 million of approximately 13 million eligible children utilized the services provided under the early and periodic screening, diagnosis and treatment program. At present about 10 percent of the early and periodic screening, diagnosis and treatment program referrals are for vision problems.

The Headstart program's general health objectives include a comprehensive health services program, promotion of preventive health services, and attempts to link the family to an ongoing health care system.

In 1974, 350,000 preschool children received a thorough health screening, including mental and dental examinations, and had their developmental and medical histories recorded.

As to health services in the school system, many schools provide a fairly comprehensive screening program for eye, ear, speech, and dental difficulties of all children entering kindergarten or first grade classes.

Several programs of the Federal Government in the field of education can and do assist less affluent districts in providing the desired services. For example, this year the title I program of the Elementary and Secondary Education Act will provide $1.9 billion for services to the educationally disadvantaged youngsters across the country.

Health and related services are eligible for support under this program. Other federally funded programs under which health services are eligible for receiving financial support are title III of the Elementary and Secondary Education Act [supplementary educational centers and services]; title VII and [bilingual education]; title VIII of the same act of [health and nutrition, and dropout prevention programs]; the follow through program [a program to continue the Head Start activities]; and Education of the Handicapped Act.

In conclusion, Mr. Chairman, we urge that H.R. 4092 not be enacted in light of the serious deficiencies in the nature and the scope of the screening program proposed in the bill because it would expand the Federal role for help beyond those in greatest need, because it would tend to duplicate some of the vision care aspects of existing programs such as maternal and child health and early periodic screening, diagnosis and treatment programs, and because its categorical approach would negate the comprehensive health care objectives of the Department.

Thank you, Mr. Chairman. We greatly appreciate your invitation to appear here today and my associates and I would be pleased to answer any questions you or the members of the subcommittee may have.

Mr. LEHMAN. Thank you, Dr. Dickson.

I have a couple of brief questions. One is I know the Department is emphasizing title I money for specifically reading and arithmetic. If you are going to emphasize reading and arithmetic, how can you also spin off money for such health purposes as vision?

Dr. DICKSON. May I defer that to Dr. Alford. It is a particular area of his interest.

Dr. ALFORD. This is not required under title I. The only point we make is that this is an option that is available to the various local educational agencies in their program.

Mr. LEHMAN. May I interrupt you?

How much of this option is being used at the present time percentagewise or numerically? You have all kinds of health services out of title I money.

Dr. ALFORD. On page 17 of the longer testimony introduced in the record, there is a chart that lists various Office of Education programs and includes estimates of Federal expenditures and the number of students served. Please note the data under low income (the title I program) including an estimate of $22 million, almost $23 million, and serving about 1.7 million students encompasses all health functions, not just visual screening.

Mr. LEHMAN. Trying to figure out that percentagewise, 22 million out of 1800 million isn't a very big percentage.

Dr. **Alford.** No, it is not a large percentage.

Mr. **Lehman.** My next question would be if we disagreed with you that this was needed, what do you think of some kind of a formula where just roughly maybe one-third of the money for such health services would come from the State, one-third from existing title I funds, and one-third new money?

Would you care to react to some kind of a formula such as this?

Dr. **Alford.** Would you put that in context?

Mr. **Lehman.** I will see if I can go around again.

I know that you have stated that the Department is not going to be in favor of such legislation philosophically or naturally, but if we do come up with some kind of legislation what do you think of something that would actually use one-third of its funding from existing title I appropriations, the States or local education agencies would provide one-third, and then as an incentive to perhaps bring in one-third new money in this legislation.

It doesn't have to be exactly those terms, but as a three-way input from three different sources in order to encourage this kind of service.

Dr. **Alford.** Dr. Dickson probably will want to respond.

I might say, as far as title I is concerned we perhaps would have some reservations on earmarking this for these purposes, but I would like to have Dr. Dickson respond overall.

Dr. **Dickson.** Yes, sir; I understand the content of your question.

I think from my point of view that the question suggests that the recognition we give to all the other programs I mentioned here is sort of overlooked. I know that is not intended but looking department-wide and, say, in focusing in on title I, I would just like to say there are other programs that do a considerable amount.

Mr. **Lehman.** If the gentleman would yield back, the $22 million sounds like a big number, but it runs out about 1 percent of the total title I money, so I think there could be some funds available under title I to provide some encouragement to a program such as this.

Dr. **Alford.** We must note that title I is restricted to eligible schools in the program. Therefore, it is not an across-the-board kind of program.

Mr. **Lehman.** Title I money is restricted to economic areas.

Dr. **Alford.** Right.

Mr. **Lehman.** Perhaps we could find ways to make that available to others in this particular category, but that is something far down the road.

Dr. **Dickson.** Mr. Chairman, could I ask Mrs. Moore to respond to this from the point of view of her program?

Mr. **Lehman.** Mrs. Moore.

Mrs. **Moore.** Mr. Chairman, the question I am wondering about is whether the participation would be clearly mandatory upon the States, because the experience with EPSDT in States voluntary participation has been uneven at best.

As you know, the program can be expanded as far as the States are willing to give services, but to this point it has been quite limited.

Mr. **Lehman.** My suggestion was very nebulous. It is just trying to focus something on ways to bring the various areas of education funding into this program without depending entirely on new money. I think there are too many complications to pursue it too much further.

Unless you have any particular comments I would like to ask Mr. Goodling to see if he has any questions.

Mr. Goodling. Just one.

You heard my comments in the previous testimony where I indicated that physicals are done by doctors and the dentals are done by dentists, and I would be the first to admit, for instance, in my State that the eye screening is done by the school nurse.

Of course, I am very reluctant when it comes to Federal intervention, but should not something as important as eye screening also get the same priority that dental screening and the health screening get, general health screening.

Mr. Lehman. Would the gentleman yield?

In many districts such as the one I represent it is not even done by the school nurse. It is done by the physical education teacher.

Dr. Dickson. From my own personal point of view, I feel that the vision problem should be treated primarily by a physician who looks at the patient and at the same time in the interest of efficiency and cost also looks at two or three other particular areas for screening like eye, ear, and speech, particular areas that would have a high yield with respect to the cost.

I say that is ideally so. I think at the same time it is quite clear in the country today we live in a period where our aspirations have outrun our resources and we can't do all the things we ideally might like to do. Under the present spectrum of programs, we feel very positive about the problem and positive about the nature of our present screening programs. While we are less than satisfied as opposed to what we might ideally be doing, I think we look at the same time on the fact that the issue of aspirations and resources and just everything can't be done that everyone might like to do.

Mr. Goodling. Has your Department put a price tag on this legislation?

Dr. Dickson. On this legislation?

Mr. Goodling. Yes.

Dr. Dickson. Well, I made an estimate of it, yes.

Mr. Goodling. Would you care to state that estimate?

Dr. Dickson. Yes, I think it would cost in a single year in excess of $800 million.

Mr. Goodling. I have no further questions.

Mr. Lehman. Mr. Risenhoover, please?

Mr. Risenhoover. Mr. Chairman, if I could I would like to ask a question of Dr. Yamamoto who testified earlier.

What would be the outside maximum cost that you would estimate would be involved here with this bill for a national screening program?

Dr. Yamamoto. Mr. Chairman, the figures that we have developed are in the range of $3 to $6 per child, and this will again depend on the type of screening that the local school district or the State health or county health department would like to implement.

Mr. Risenhoover. Are we talking about how many children are being screened each year?

Dr. Yamamoto. I think the Office of Education would have those figures. We don't have those figures.

Dr. Harwood. You have to look at more than one aspect of that bill.

Mr. Risenhoover. I am talking about the maximum that you would estimate.

Dr. Harwood. To do the whole job as suggested by that bill?

Mr. Risenhoover. Yes.

Dr. Harwood. Five times $80 million. That would be, of course, a class grade A super program.

Mr. Risenhoover. Then that would be a cost of $400 million.

Dr. Harwood. I would emphasize that the first class grade A would have all the things you need in the program and probably would be a bit superfluous.

Mr. Risenhoover. The point I want to make is that $400 million at the outside is a rather small figure when compared to the President's Office's estimate of $1.7 billion for repeaters or dropouts.

Dr. Dickson. That $800 million, and what I actualy feel would turn out to be $1 billion, is derived from calculating attention to the students from grade 1 to grade 12.

That $400 million may relate to grades 1 to 6, but I know exactly what is going to happen once you start this thing moving and you won't end up doing it just for grade 1 to grade 6, so that $400 million, if it is calculated on the first six grades, does become $800 million.

I also know when you make estimates like this in a program with the administrative problems that you will have here in getting this thing to go, you should add another 20 percent. As far as I am concerned personally, it is $1 billion request and it is also $1 billion request to do something the wrong way.

Mr. Risenhoover. I notice here in your testimony you say that general health services would incorporate those normally provided in diagnosing and treating children with visual difficulties. Is that what you are saying that that means?

Dr. Dickson. I couldn't hear you.

Mr. Risenhoover. In your testimony I note that you have said general health services would incorporate those normally provided in diagnosing and treating children with visual difficulties. Is that what you are saying that that means?

Dr. Van Hoek. The health services program, such as the maternal and child health program, has a standard set of preventive services which are part of the program which includes vision screening as well as evaluation of hearing, dental examination, and so forth. In terms of a program for prevention and screening of problem situations, it is important that the entire spectrum of problems be identified for children. It is also particularly important that it be done prior to entering school because many of the problems are correctable prior to entering school and most of our programs are geared, such as the maternal and child health program, to deal with the children and their problems at the earliest age possible.

Mr. Risenhoover. I agree that that is when it should take place, but what are you going to do about these millions of children that are already in the system who have not yet finished school? How do you propose to deal with that problem?

Dr. Van Hoek. Through programs of education of the citizens, those who have the ability to pay for services ought to seek those services through their personal physicians.

We have other programs—maternal and child health programs, neighborhood health center programs—which provide care to individuals for lesser income who are unable to pay for it through the private practice of medicine.

Similarly, the medicaid program mandates early and periodic screening for all children under 21 which they are eligible for under that program.

Mr. Risenhoover. This all sounds very good but as a matter of fact it simply is not happening. I know in my State of Oklahoma, and I feel probably all across this country, the Lions Club provide glasses for children who need them in school.

Children are just not getting them. The problem is as the chairman mentioned—having physical education teachers screening for visual deficiencies.

You are looking at someone who went all the way through school and finally when I was inducted into the military and was given my physical examination it was discovered I had astigmatism, 20/70 in one eye. My grades in high school were bad and it was not because I didn't attend school or didn't try to learn. After my vision was corrected with glasses I had no difficulty whatsoever.

These visual deficiencies are just not being discovered through existing programs. Whether you intend for them to be or not, they are not being discovered. In general health services you are not going to find visual defects unless you have an optometrist or a specializing doctor find them. There is just no other way for them to be found.

I am afraid some of your priorities are screened up as far as I am concerned. I strongly feel that we should be spending more money in areas such as this with these young people rather than blowing it on some of the other programs that we see money being spent on.

Dr. Van Hoek. I would like to make two points:

One: In response to the specific point you made, is that there is no question that we are not meeting the needs of many children in this country and that there are problems. The question is: "Will they be dealt with adequately by individual, single pieces of legislation which attack only part of the problem, perhaps in the wrong way and at the wrong age of children?"

We spend $800 million in Health Services Administration alone just trying to develop health services to individuals of low income and we are frequently frustrated by the ability at the local level to integrate those programs because of the categorical nature of the legislation.

Part of the problem we are dealing with is not a question of Federal authority and Federal funds; it is a question of: "Can the community and the States at the local level organize their resources to effectively deal with the problem?"

In some cases we create barriers administratively rather than helping to improve that organizational approach.

I would like also to make a personal comment about the question of the type of individuals that should be doing the screening. I think if, with proper medical intervention and medical training, there are individuals lesser trained than physicians who can do the preliminary screening of many health conditions, and in order to get people into the system we need to do that, and if we rely entirely on fully trained physicians and other specialty-trained health manpower, we are never going to get everyone screened adequately.

Mr. Risenhoover. Well, I agree with you and I would certainly agree that there are darn sure enough administrative barriers thrown up across all these programs. I would agree, also, that with Head Start and day care we are taking a lot of steps in the right direction. However, these other students who are already in the system are just not being discovered and treated. Even if this legislation costs $1 billion, I would still say that it is a small price to pay to get these visual defects straightened out and give these young people an opportunity. But, cost-effectivewise we are not doing it. Again I question some of the priorities and when I see the President vetoing a bill like the school lunch bill I wonder what the priorities are.

I am beginning to be a little skeptical—especially when I see some of these administrative barriers that are being thrown up by HEW. If there was not a need for this kind of legislation, Congressman Rangel would have never introduced it.

There has been a lot of research done already and a lot of it by the Administration. When you are talking about $1.7 billion compared to $1 billion, to me we are still well within the ballpark. Frankly, I question whether it would cost that much.

I think $400 million is a more realistic figure.

Mr. **Lehman**. Thank you Congressman Risenhoover. Congressman Jeffords?

Mr. **Jeffords**. With respect to program costs, as I understand it, if you had an extra $400 million or $800 million you would rather see better effectiveness in the EPSDT program than initiating a new program like this. Would that be fair to say?

Dr. **Dickson**. I don't think so. We do have a lot of programs here. I am not sure exactly at this moment how it would be spread out.

Mrs. Moore would like to address that question if she may.

Mrs. **Moore**. I would like to understand a little more what your question is.

Mr. **Jeffords**. I am saying, assuming we were to agree with some of these statements that more money is necessary and Federal priorities should be set in this area, do you feel it would be better to start this as a new program or to attack the costs through better funding of existing programs? Let's put it that way.

Mrs. **Moore**. If we can overlook any possibility of our own bias, talking a little bit about the comprehensive EPSDT program, what else would be provided to children in the course of that program? I think it would be expedient for all of those concerned to have more effective use of that program knowing, if we are talking about the Medicaid population, what else happens. There are 31 million children who could get full health services in the same process as getting visual screening.

Mr. **Jeffords**. Second, we talked a little bit about the difference between $400 million and $800 million. What happened to the estimates of cost with medicare and medicaid from the time they were first estimated to what the actual costs turned out to be?

Mrs. **Moore**. Certainly in the case of medicaid the cost in the past 3 years, I believe, has gone up at the rate of almost $2 billion in the Federal share and without appreciable benefits, certainly at least, in the preventive services offered by the EPSDT program.

Mr. **Jeffords**. And, lastly, assuming you have a program which does individual screening of problems in that area, could you expect that there would be an age where the student would be able to verbalize his problems so that you wouldn't necessarily have to be screening every year from 1 through 20 or whatever might be the age group?

Dr. Dickson. That question has come up recently. I might turn to one of the witnesses accompanying us behind me, Dr. Kaiser from the National Eye Institute.

Do you have any comment on that?

Dr. Kaiser. I am a pediatrician and a board ophthalmologist and therefore have some experience and knowledge in the area we are discussing this morning.

I think there are important points to be made in favor of screening and I, for one, think this is a very important issue. We have been talking here about children of first grade, sixth grade, et cetera. We have not put enough emphasis on the preschol child; it is during this age period that the child needs to have screening and have visual disabilities picked up on examination.

As to later on, one finds that screening on a yearly basis is not efficient in terms of picking up any more vision problems than are picked up on a less frequent basis, such as every 2–3 years.

It is true that children may not recognize that they have vision problems, but this generally is the case only in the younger child.

Mr. Goodling. One additional question. I think I am a little confused about the $400 million, $800 million and the $1 billion from this standpoint.

Of course, I didn't have the privilege of seeing this bill before this morning and I just looked at it quickly. Depending on what the word "followup" means, I didn't see that $400 million, $800 million, or $1 billion could begin to touch the whole program.

When we talk about followup, if we are talking about every youngster who has been found to have any type of problem found on the screening, no matter what their income range is, and we are going to then totally take care of the problem, I don't see how a billion dollars could scratch the surface of a program of that nature.

Dr. Dickson. Actually it constitutes categorical eye insurance bill. That is what we are really talking about there. If the Chairman would like, we can provide for the record the exact way that we calculated that cost in excess of $800 million for the grades 1 through 12.

The cost of screening is estimated at $5 per child. If referral for diagnosis and short-term treatment is required, the cost per child would be about $100. Some children would require surgery or long-term treatment at an average cost of $1,000. Assuming an initial screening of 13 million, the number for followup is estimated at 2.5 million, and those needing further care would be about a half million. Thus the overall cost would be about $800 million.

I believe also, depending on further interpretation that may be made of followup services and training of personnel, that that figure can go much beyond $1 billion. There is no question the floodgates are open.

It is a categorical national eye insurance bill, and when you start going after the eye with a bill and the ear with a bill, pretty soon you are going to have an administrative disaster and costs you just wouldn't believe. When you have a separate categorical approach to the eye and a separate categorical approach to the ear, you don't get the adequate overall care for a child.

You get pieces of the pie and it is not good enough.

Mr. Goodling. Of course, that was part of my concern when I addressed the doctors, the whole idea of socialized medicine. May I ask you gentlemen when you talk about followup, what were you talking about?

The bill talks about followup. What do you figure into your $400 million for followup, for instance?

Dr. **Harwood.** I made the statement that that was a first class grade A type program. It might be easier to understand the cost functions because there are some very unusual, to my ear, numbers being presented.

I think the Department of Education says there are about 80 million children in school, the first 12 grades. Forty-five million, I have just been told. If you will calculate the last time you had your visit to your eye specialist and the cost for yourself, it was probably in your case around $100. Per child the average cost is more like $70. That is for full service, detection, diagnosis, and in the case of eyeglasses at least the provision of eyeglasses, so we are talking about less than $100 for each one of these people, so if you want to talk in big terms you might as well give each family $100 for each child and you will have a $450 million program according to the figure just presented.

I think that $1 billion figure is in my terms a bit ludicrous in that you could do the whole thing for half that amount. The detection program could be done in this program for about $80 million. The treatment program could be done for those who need it after an effective detection program for a few hundred million more. That is rather an elaborate program.

Mr. **Lehman.** For the purpose of the record could you give us a written statement of these cost estimates and the method at which you derive these estimates just so we have them in the body of the record?

Dr. **Harwood.** Most certainly.

Mr. **Lehman.** Without objection.

Dr. **Harwood.** The American Optometric Association will present those figures in detail. Thank you.

[The information referred to above follows:]

ESTIMATED COST FOR PROVIDING VISION SCREENING SERVICES

Cost per 100,000 children: $325,000.

ESTIMATED COST FOR EXAMINATION AND LIMITED THERAPY PROGRAM

Cost per 100,000 children: $1,600,000.

ESTIMATED COST FOR VISION SCREENING AND EXAMINATION AND LIMITED THERAPY PROGRAM

	Population	Vision screening	Examination and limited therapy	Total cost per grade
Grade:				
1	3, 201, 000	10, 403, 250	51, 216, 000	61, 619, 250
2	3, 109, 000	10, 104, 250	49, 744, 000	59, 848, 250
3	3, 175, 000	10, 318, 750	50, 800, 000	61, 118, 750
4	3, 347, 000	10, 877, 750	53, 552, 006	64, 429, 750
5	3, 509, 000	11, 404, 250	56, 144, 000	67, 548, 250
6	3, 557, 000	11, 560, 250	56, 912, 000	68, 472, 250
Subtotal		64, 668, 500	318, 368, 000	383, 036, 500
7	3, 711, 000	12, 060, 750	59, 376, 000	71, 436, 750
8	3, 703, 000	12, 034, 750	59, 248, 000	71, 282, 750
Total		88, 764, 000	436, 992, 000	525, 756, 000

Mr. LEHMAN. Mr. Goodling, is that it?

Mr. GOODLING. I was just trying to figure out whether I came up with the right figure.

Dr. ALFORD. $4½ billion, I think.

Mr. GOODLING. I think it is $4½ billion, the multiplication of 100 times 45 million.

Dr. HARWOOD. I have automatically divided because I know only about less than 15 percent will end up with eyeglasses.

Mr. GOODLING. I was just multiplying. I have no further questions, Mr. Chairman.

Mr. LEHMAN. Thank you.

Thank you, gentlemen, for coming up from HEW. We will be back in touch with you.

Dr. DICKSON. Thank you, sir.

Mr. LEHMAN. Now we have the final panel, Mrs. Katherine Horton, Bill Wilkerson Hearing and Speech Center, Nashville, Tenn.; Mr. Lester Barad, director, Bureau for the Education of the Visually Handicapped, New York City; and last, but not least, from Dade County, Fla., Mr. Peter Paraskeva, coordinator for the visually handicapped.

Mrs. Horton, I think you have a visual exhibit to go along with your testimony.

STATEMENT OF MRS. KATHERINE B. HORTON, THE BILL WILKERSON HEARING AND SPEECH CENTER, NASHVILLE, TENN.; LESTER BARAD, DIRECTOR, BUREAU FOR THE EDUCATION OF THE VISUALLY HANDICAPPED, NEW YORK CITY; AND PETER PARASKEVA, COORDINATOR FOR THE VISUALLY HANDICAPPED, DADE COUNTY, FLA.

Mrs. HORTON. Yes, sir.

Mr. LEHMAN. I thought perhaps, without objection, we would let the testimony come first. Then as time allows we will have this exhibit of yours.

Mrs. HORTON. I would hope that we would be able to include it because part of my testimony is housed in that exhibit.

Mr. LEHMAN. All right. We will expedite as fast as we can. Usually about 5 or 10 minutes after 12 we have a quorum call and then it is difficult to keep a committee here after the House goes into session.

Did you decide who is going to go first?

Mr. PARASKEVA. We are completely unrehearsed.

Mr. LEHMAN. Mr. Barad, would you summarize your testimony, if possible, so we can get everybody in?

Mr. BARAD. I submitted a statement last week and I am very happy that I have had the opportunity to be invited here.

I would like to say that many of the things which have been said here today I agree with and some, unfortunately, I disagree with.

I am the director of the Bureau for the Education of the Visually Handicapped of the Board of Education of the City of New York.

At the outset I would respectfully suggest to the subcommittee, possibly to Congressman Rangel, that there be a rewording of the bill starting at line 16 on page 2 in section 3 so that what appears to be some inadvertent errors will be corrected.

At the present time, the wording seems to indicate that students will be giving or providing certain services rather than receiving them. I am sure this was not the intention of the people who drafted the bill.

Mr. LEHMAN. Probably a typo.

Mr. BARAD. I can only speak personally from my experiences in New York City in the last 5 years. I feel this bill is sorely needed and my own feeling is that this bill should have been proposed a long time ago.

We have mentioned vision screening. We have mentioned the followup necessary after vision screening takes place, and the acquisition of glasses.

All of these things are terribly intertwined and we must impress upon the committee the fact that all three must exist together and the mere existence of one phase of such a program would be like setting up a chain of links that are not connected.

In New York City, unfortunately, we have a situation similar to one that one of the Congressmen indicated, that we have some teachers doing screening, maybe a gym teacher, maybe the classroom teacher, and so on.

In the last several years we have attempted to change all of this but because of the nature of school screening in the city it couldn't be done unless eventually there is some program, there is some leadership, and type of line responsibility associated with vision screening, and with followup and with the acquistion of those types of additional services or devices which would flow from that type of a program.

Now, there is in this bill the opportunity, and I think sometimes this is missed, for the States to set up a system, and it has been done with other Federal funds that are sent out from Washington, for people to apply to the individual States with programs that would be inspected and evaluated before they are implemented even, and then these programs would be approved within the State.

I don't want to repeat what is in the written statement which I sent, but I would like to say on the matter of the need for the training of people to do the screening, it has been our experience in New York that you can get a rather effective screening program by the training of people far below the caliber of medical profession or optometric profession. We have taken volunteers, parents, aides, people from the community, and given them topnotch training at one of the leading hospitals in New York by someone who is extremely capable to conduct this type of training.

These people have been sent back into the schools and have done a creditable job of vision screening. We must concentrate on the word "screening." Screening by its very nature is a sieve and you can make this sieve as tight or as loose as you wish, depending upon what your funding might be like, depending upon your philosophy involved in the word "screening," and we have found that we have had a very good return in those communities where we could get this plan across.

Now, we have certain handicaps in the city of New York which perhaps are more difficult to overcome than perhaps in some small town in Oklahoma or in Montana or in Wyoming, but this would be left up to the individual States to work with and so the fear that the Federal

Government would be involving itself directly into the mechanics of this I think is an unfounded fear.

Now, I do not feel that if we are to cost out a program of practical vision screening in the public schools we should cost it out on the premise that we should do it with volunteers. The experience in New York has shown when we are dealing with the school population, forgetting about the high school youngsters, just the elementary and secondary youngsters, we are dealing with a population of over 800,000 children.

We cannot do this with volunteers because there are problems with volunteers, the turnover and the retraining of them or other people, so to try to do this on a shoestring is also not the answer.

But I do not feel, as the panel preceding me felt, that we will be opening up the floodgates to untold billions of dollars. The New York experience has been a very heartening one. Our hope is that by the enactment of such a bill the States could then mandate to the cities and say, "You must have a screening program."

The chancellor would then mandate to the principals "This is the type of program we have been funded for and, therefore, we are going to conduct this type of training in the public schools."

New York City has 32 school districts of its own plus another district assigned to take care of the high school youngsters.

I would like to make some other suggestions regarding the bill. The bill emphasizes that priority should be given for "tests and for services for students in the first six grades of elementary school." I would like to point out that the great professional support (ophthalmological, optometric, educational) can be given to the view that the screening should be initiated in prekindergarten and kindergarten years since there are certain types of eye conditions for which very early identification is essential and, indeed, crucial.

All too often cases have come to the attention of our bureau—and our bureau deals with those of marked deficiencies because these are the youngsters who are going to end up in special programs for the visually handicapped—well after the first or second grade.

There are untold numbers with less marked visual problems which are more subtle and not so identifiable by the classroom teacher and these go undetected or not properly followed up until well into the child's school career. Yet we have seen in certain districts scattered around New York City where we had a temporary State funding for people called health and drug service counselors or supervisors where we were able to pressure them to siphon off a certain amount of their time into the vision screening program that we were trying to promote. We saw a much better result and we saw kids being identified at a much earlier age. But we were siphoning off because we tacked on to something that the States had provided very minimal amount of money for, and I might add that in this bill I would hope that some provision be made if this gets off the ground that there be certain restrictions placed so that people would not be able to siphon off from the vision screening program certain moneys or personnel to do other general health and guidance type of work.

I would like to also point out, because nowadays when people think in terms of Federal funding they often think in terms of a tremendous amount of hardware, very expensively designed equipment, I would like to point out that the instruments with which to do school screening exist and these are not expensive and they are not cumbersome, and we should not fall into the trap that we need a tremendous weaponry in order to do this.

H.R. 4092 correctly suggests in section 3B that a panel be composed of ophthalmologists and optometrists to advise the Secretary with respect to standards referred to in 1A of the bill. However, I would respectfully suggest that there be a change in this, and that there be at least one person on the panel to represent school systems in view of the fact that the optometrists and the ophthalmologists might be able to be helped in the actual implementation and the logistics of going about this as to how best to pursue it in a school setting.

I would also suggest that any funding that the States eventually give out to their subdivisions be for no less than a period of 3 years so that a body of expertise and experience can be built upon and real solid evaluation be done.

An evaluation is a very important thing if we are to gain from these experiences.

I believe I have used up my share of the time.

[The statement follows:]

PREPARED STATEMENT OF LESTER BARAD, DIRECTOR, BUREAU FOR THE EDUCATION OF THE VISUALLY HANDICAPPED, BOARD OF EDUCATION OF THE CITY OF NEW YORK

Dear Mr. Chairman and Honorable Representatives: I am the Director of the Bureau for the Education of the Visually Handicapped of the Board of Education of the City of New York. I have been interested in and involved in the matter of school vision screening for the past 25 years as teacher, supervisor and director.

I am very happy to be able to come here to speak in support of this bill which I believe is the first of its kind and which will, if passed, be of benefit to students, parents, teachers and taxpayers alike.

At the outset, may I respectfully suggest that there be a rewording starting at Line 16 on Page 2 in Section 3 so that what appear to be some inadvertent errors will be corrected. At the present time, the wording seems to indicate that students will be giving or providing certain services rather than receiving them. I am sure this was not the intention of the people who drafted the bill.

I can only speak from my experiences in the New York City System in regard to the lack of adequate programs for school vision screening, the follow-up necessary after school vision screening and the acquisition of glasses or other devices, and/or other services. While the Chancellor of the Board of Education mandates that vision screening be done yearly in the schools, there is no complete system for accomplishing this and the necessary follow-up throughout the 900 schools. Some of the reasons for the existence of this deplorable condition include:

1. The lack of a centralized city-wide mandated *program* within the Board of Education.
2. The awkard theoretical involvement of another city agency, The Department of Health, in the process of identification and follow-up.
3. The decreasing financial capability and willingness of both agencies to divert funds and staff to these purposes.
4. The lack of standardized procedures in the 900 odd schools.
5. The untrained people chosen to do the screening and the widely varying physical conditions under which this screening takes place, when it is done.
6. The lack of the very small, but necessary, amount of money needed to purchase certain inexpensive tools.
7. The lack of special funds for glasses for those who cannot afford them or qualify thru medicaid.
8. The fact that although volunteers to be used in the screening aspect can and have been trained by doctors and non-doctors, they are not in the long haul the answer in New York City due to the problem of turnover and consequent retraining.

This unfortunately leads, therefore, to late identification, or services, and/or correction when throughout the country people are striving for early identification and correction of children's deficits. Consequently, I heartily endorse the statement in the bill that priority should be given for "tests and for services for students in the first six grades of elementary school." However, I would like to point out that great professional support (ophthalmological, optometric, educational) can be given to the view that the screening should be initiated in pre-kindergarten and kindergarten years since there are certain types of eye conditions for which very early identification is essential and, indeed, crucial!

All too often cases have come to the attention of our bureau—and these are cases of *marked* visual deficiency—even after the first and second grade. In cases of *less marked* visual problems which should have been identified, they may go undetected or not properly followed up until much later in the child's school career. On the other hand, we have seen in certain areas or districts, where more systematic and aggressive screening takes place coupled with follow-up, that larger numbers are identified at earlier ages to the benefit of the children.

It should be pointed out that the instruments with which to do decent school vision screening exist. These instruments do not have to be expensive and cumbersome. However, where funds are needed are in the areas of training people, funding a supervisory arm and in the crucial area of personnel for the follow-up so necessary for students who have been identified. We are clearly dealing with a chain in which every link must exist or the whole process of benefiting the student in the classroom situation and elsewhere breaks down.

I would also respectfully suggest that if and when states are given funds that some provision be made that the funds be very specifically ear-marked and monitored so that local administrators cannot siphon funds or personnel into other health or guidance services. I would also suggest that either this legislation or the guidelines that the states will produce contain a provision requiring that program proposals be for a minimum of three years so we do not run into the problem of one year hit-and-run crash programs that are here today and gone tomorrow and leave no residue of expertise or experiences on which to build.

H.R. 4092 correctly suggests in Section 3B that a panel be composed of ophthalmologists and optometrists to advise the Secretary with respect to standards referred to in 1A. However, I would respectfully suggest that there be at least one person on the panel to represent school systems, in view of the fact that the latter could bring to the attention of the opthalmologists and optometrists their knowledge about how implementation may best be pursued in school settings.

I would also suggest that states be required to acquire statistical information from any subdivision which receives a grant so that analyses can take place which will be valuable in evaluating procedures, programs and results. The importance of this last suggestion can not be underestimated.

I will be happy to attempt to answer whatever questions you wish to raise and provide you with additional comments either now or at some subsequent date.

Mr. Lehman. Thank you very much, Mr. Barad.

Mr. Paraskeva, could you briefly summarize your statement?

Mr. Paraskeva. You wouldn't believe how similar my testimony is to the testimony of my colleague from New York.

We had never even spoken until hearing this testimony now, so that mine will be summarized very simply. We do not quarrel with the paraprofessionals, with the others, the teachers, the phys-ed teachers. I think they are doing an excellent job in what they are doing. There is no problem here at all.

The initial eye screening program for the typical youngster is fairly well done except for the comprehensive program that we would request in this bill. The core of our problem is to identify those seriously visually impaired kids who have continuously failed initial eye screening programs and may be partially sighted and even legally blind. According to the national prevalence figures, approximately 0.09 percent of school-age population are in need of additional services.

The actual number served falls far below, depending on the local school area. Visual screening and diagnosis is also essential for those multihandicapped students who may have as their primary deficit cerebral palsy, mental retardation, or hearing problems, but also as a secondary problem severe visual, impairment exists. These students can also profit from the special equipment that the Library of Congress has set down for visually impaired kids, all free of charge. Talking book machines, cassette-type records, other things that we use now with visually impaired youngsters coud be spread out and used with these other youngsters.

Without more careful diagnosis an eye specialist may give myopia as the primary problem, while in fact the true eye condition that presents the greater problems during the student's school days will be night blindness which is part of a larger, more inclusive diagnosis of retinitis pigmentosa or primarily pigmentary degeneration.

The myopia may be of little consequence for teaching this student.

On the other hand, the night blindness may be the greatest problem without the teacher or parent knowing the condition exists.

A specific example of how H.R. 4092, if passed, could aid in the identification of seriously visually impaired students in Dade County public schools, Miami, Fla., is as follows:

During the past school year a diagnostic center for the evaluation of pupils with special learning problems has been established. There are many services provided for students at this center, including those of auditory, physical and psychological evaluations. At the present time, if students fail the school eye-screening tests given in each elementary school in Dade County, and the recommendation is made for a more extensive eye evaluation by a qualified eye specialist, the family may or may not follow through. Many times parents have had to make a low priority item of this due to other needs, therefore, the child goes without the needed visual support.

If additional Federal funds were available to aid in a full visual evaluation for those students with serious vision problems in a center such as the Dade County Public Schools Diagnostic and Evaluation Center, students could be given the visual support needed to perform better in their individual school programs.

It must be underlined that these funds would be used in providing students with serious eye problems the identification and followup services needed, versus merely initial eye screening. It must be reiterated, this latter service has been provided and no changes are requested in that program.

The partially sighted and, many times, legally blind children must be given additional support. In conclusion it should be noted that gains made in providing visually handicapped students the teachers, equipment, and materials have been great. Yet the problem of identification supersedes this. In fact, without adequate visual identification, these instructional programs cannot exist. This is another reason for our hoping that bill H.R. 4092 becomes operational throughout the United States.

Thank you for your time.

[The statement follows:]

PREPARED STATEMENT OF PETER C. PARASKEVA, COORDINATOR, PROGRAMS FOR VISUALLY IMPAIRED, DADE COUNTY PUBLIC SCHOOLS

Within the last decade, there have been great strides made in the education of exceptional children through local, state and national efforts. Many students, formerly unable to attend public school classes, are now an integral part of the total school population.

Through efforts of early identification and reporting of specific learning and health problems students have participated in activities far beyond their expectations. For the most part every effort is made to provide a student with the services most appropriate to him once he is identified. However, this area of screening and diagnosis is precisely one of the major difficulties when identifying Visually Impaired students. Despite an increase in educational services and programs, the incidence of those youngsters reported is far below the suspected numbers that are being served.

According to the national prevalence figures, approximately .09% of school age population is in need of these services, and the actual number receiving assistance falls far below this figure, dropping down to .02%, depending on the local school district. It still remains low after taking into account those youngsters attending residential and private schools for the Visually Impaired. Therefore, we can deduce that a sizeable group is not being referred for services that are available.

Visual screening and diagnosis is also essential for those multi-handicapped students who may have as a primary disability, Cerebral Palsy, Hearing Impairments and Mental Retardation, but also have a secondary problem of a visual disability. These students often profit from these special instructional techniques and materials designed for the Visually Impaired.

Support for federal legislation in the form of The House Subcommittee on Elementary, Secondary, and Vocational Education. Bill H.R. 4092 will aid in providing all of the aforementioned services. It will also insure that visual evaluations and recommendations will be communicated to the benefit of the boys and girls tested; that is, an organized method of referring those children through a system that will be accountable for ultimate delivery of services, promptly and efficiently. Modern techniques of visual evaluation will replace the sometimes "antiquated" forms of eye screening still employed in some areas. That is, instead of testing for "distance vision" only, a more comprehensive examination model will be produced engouraging communities and school districts to emulate and reproduce these programs.

A good example of where we are today in eye screening as opposed to where we could be, is borne out by Amie L. Dennison, in her article entitled THE EYE POINTS THE WAY:

"*Diagnosis*—The description of what is being dealt with is essential. Few would question the need for this item. Yet there is great disparity in the accounts given for it. Incompleteness seems to be the greatest problem. For example, the eye specialist (in this case, the oculist) may very well give only myopia as a diagnosis when in fact the eye condition that presents the greater problems during 'school days' may well be night blindness which is part of the larger and more inclusive diagnosis of retinitis pigmentosa or primary pigmentary degeneration. The myopia may be of little consequence in the academic setting for which the special teacher will be planning. The night blindness, on the other hand, may be presenting insurmountable problems to the visually handicapped student without any teacher (or parent) knowing the condition exists."

A specific example of how Bill H.R. 4092 (if passed) could aid in identification of seriously visually impaired students in Dade County Public Schools, Miami, Florida is as follows:

During the past school year a Diagnostic Center for the evaluation of pupils with special learning problems has been established. There are many services provided for students at this Center, including those of auditory, physical and psychological evaluations. At the present time, if students fail the school eye-screening tests given in each elementary school in the Dade County, and the recommendation is made for a more extensive eye evaluation by a qualified eye specialist, the family may or may not follow through. Many times parents have had to make a low priority item of this due to other needs, therefore, the child goes without needed visual support.

If additional Federal funds were available to aid in a full visual evaluation for those students with serious vision problems in a center such as the Dade

County Public Schools Diagonistic and Evaluation Center, students could be given the visual support needed to perform better in their individual school programs. It must be underlined that these funds would be used in providing students with serious eye problems the identification and follow-up services needed, versus merely initial eye screening. This latter service is currently provided and no changes are requested in this program. The partially sighted and many times legally blind children, have not been able to receive the care and support needed. For these reasons, we support Bill H.R. 4092.

Thus we can come to the conclusion that if the quality of this vision screening program is not complete in its exploration of the total visual problem, almost no effect will be felt by the results given. Many health, learning and behavior problems would have long been ignored or unsuspected were it not for complete visual screening, signaling the cause of a student's real difficulties. We must also realize that interpretation of this data must be in terminology that will communicate the deficit rather than compound the treatment. Translating the diagnosis into terms that parents and teachers can understand and be aware of, will ultimately bring the best results for the child's adjustment to his visual problem.

In conclusion, it is important to reiterate that the gains made in providing teachers, materials and equipment for visually impaired students are essential and further expansion in this area is vital. Yet, the problem of identification supersedes this. In fact, without adequate vision screening these instructional programs cannot exist. Therefore, every effort should be made to insure that The House Subcommittee on Elementary, Secondary, and Vocational Education, Bill H.R. 4092 becomes operational throughout the United States.

I thank you for your interest.

Mr. LEHMAN. Thank you very much.

Mrs. Horton, could you summarize your statement first? Then we will do the questions and this I think will be the best way to do the visual exhibit.

Mrs. HORTON. All right. My name is Kay Horton and I am from Nashville, Tenn. where I am the director for a project that serves children, 0 to 6 years of age, handicapped by problems of communication, hearing, speech, and language.

Our project has demonstrated, I think in a rather significant way, that finding children young and intervening early in problems that seriously affect their sensory capability makes a significant difference in their capability to integrate into normal society.

Thus, you can guess that I am a strong advocate for very early identification of major problems in the development of children and the early intervention into those problems. Because of our work in early intervention, we received funding from the Bureau of Education for the Handicapped to engage in what they call outreach efforts, that is, we receive support not only to deliver direct services, but also to work with other agencies whose commitment was to work with, find, and assist in the rehabilitation of children with serious handicapping conditions.

As you all are probably aware, the BEH statistics indicate that about 50 percent of school-age children who are handicapped have been identified and are receiving appropriate educational services. That is school-age children. If we look to preschoolers we probably find the statistics to be significantly less and very discouraging.

In other words, it is my strong feeling that every day lost in the early developmental years adds up to the odds against the handicapped child ever fully catching up. Therefore, as a BEH-funded outreach project, we sought out other agencies who had a similar commitment to serve handicapped preschool children, and among those was Head Start.

Head Start is America's only systematic approach to serving a significant proportion of America's preschool children, and since 1972 and the passage of the bill, which some of you probably voted for, Head Start, and also child health, have been working very hard in my opinion to serve their handicapped children in addition to children without handicaps.

As we have become more closely involved with Head Start and their professionals and their programs, we have learned a great number of things. One of them is particularly striking to us and that is the unmet need to determine, through some systematic and thorough way, the specific types of problems of specific children.

Some handicaps are readily seen. Others are not so easily found. And some of them appear relatively harmless in the early stages, but if the condition is left untreated, the child's total way of existence is adversely affected and the handicap at some later point in time will not be counterbalanced.

Thus, the importance of screening which I think we should think of as an early warning system of meeting the challenge of handicapped children.

It was my intention to show you the slide program which essentially shows how more than 5,000 children in Tennessee's Head Start program were screened with a minimum of resources, including a minimum of money, but I will go on and review those statistics for you and then come to my conclusions about screening.

In that screening program we located 504 children who had serious problems of communication. We found that 18 percent of the population that we tested required very intensive followup diagnostic services. Included among those were 122 children with serious hearing impairments that required medical treatment. Four of those children were deaf. These were children 3 to 6 years of age. They had profound hearing impairments which had not been located before. Of those children, 354 had severe speech and language problems that required specialized treatment. Nineteen of them had voice problems that required medical interventioin. Two of them had cleft palates that had not previously been identified. And three of them had severe behavior problems.

In this current year, the year 1975–76, as one of 14 projects collaboratively funded by the Office of Child Development and the Bureau of Education for the Handicapped, our project will be screening in four southern States. We will be screening all the Head Start children in those States. Those States are Florida, Kentucky, North Carolina, and Tennessee. We will be screening them at a relatively low cost, in my opinion, considering some of the figures that I have heard in earlier testimony. We will be rendering service to about 35,000 children and the plan is to use indigenous Head Start and other resource personnel in those States by training them to carry out the screening process.

I would like to summarize with my major thoughts about screening, and by screening I mean screening for many things, not for a simple categorical, single type of problem. My judgments are as follows:

Screening should be done because it uncovers hitherto undetected problems. Eighteen percent of Tennessee's Head Start children were detected as having serious problems requiring further treatment and management. Seven percent of over 2,000 other Tennessee preschool children failed hearing screening.

Only through screening can we provide the basis for early intervention, that is, the kind of treatment program that will make a difference whether these children will be seriously handicapped in their adult life by their disability. And screening and the implementation of early intervention saves tax dollars because we demonstrated clearly—other programs have—that children found early have a significantly greater capability to integrate into the educational mainstream, thus requiring a reduction of specialized educational services that extend over a long time.

Screening mechanisms must be effective. They have to use valid and reliable techniques and, they are available. This has been pointed out in earlier testimony. But they require professional supervision, in my judgment, and they require monitoring mechanisms which are not a part of many of the existing screening programs that are already in effect.

We need to get screening closer to the children so that it is utilized and we have to be creative and inventive in getting around some of the problems, many of them that involve professional turf territory.

In my judgment screening should be comprehensive in order to maximize our use of resources. The problem is to get kids screened. If you are only going to do one thing there I think we are not being economical and efficient. We need to reduce the overlap and we require a much greater coordination of health and education services in this whole effort. Screening should be done early. Age 6 is too late. Many children don't enter school until age 7. The earlier, the better for all sensory impairments, including hearing, and vision, and developmental problems, including mental retardation, and certainly the public schools are progressively extending their responsibility downward.

The problem in screening is manpower. We have to use trained professionals to train professional in training. And I think the slide program, hopefully, will show the utilization of graduate students in professional training areas and their value in increasing our manpower resources.

However, screening is worthless and I think possibly even detrimental unless there are appropriate diagnostic and treatment services in place.

Again I would like to say that I think the barriers of professional turf need to be broken down. Screening serves to facilitate some of this and it serves to set service programs in place. In my opinion, the development of comprehensive early screening programs can increase the effectiveness, the timeliness, and the productivity of our entire service delivery to those children with special needs and in fact to all children.

I will save my thanks until you let us show our slide program, Mr. Chairman.

[The statement follows:]

KATHRYN B. HORTON, CHIEF, LANGUAGE DEVELOPMENT PROGRAMS, BILL WILKERSON HEARING AND SPEECH CENTER, NASHVILLE, TENN.

Good morning, Mr. Chairman, and ladies and gentlemen, my name is Kay Horton. I am from Nashville, Tennessee, where I am Director of a project that serves young children handicapped by hearing, speech, or language problems. As an integral part of the Bill Wilkerson Hearing & Speech Center, we serve families and children, 0–6, in our Parent Teaching and Preschool. We also work closely with Metropolitan Nashville's School System to ensure the successful enrollment of these children in public school settings.

Our project has demonstrated a successful approach to helping young children—many of whom have *very profound* hearing losses, through a program of early intervention, parent training, and intensive oral language stimulation, children are realizing their right to maximal participation in the hearing world.

On the basis of these early successes, we received additional support from the Bureau of Education for the Handicapped, Office of Education, or as you know it, "BEH", to engage it "OUTREACH" activities. That is, we received support to not only continue delivering direct services to children and their families, but to extend our services to families outside Middle Tennessee . . . and to engage in activities designed to stimulate other professionals, agencies and organizations to upgrade their services to handicapped children.

As you are all probably aware, BEH statistics indicate that only about 50% of all school-age handicapped children in this country are currently receiving appropriate educational services. That's only *school-age* children. With preschoolers, the statistics are even more discouraging. Probably only 25% of preschool handicapped youngsters are receiving appropriate services. With handicapping conditions, we cannot wait until the child enters school to discover and begin intervention.

Every day lost in the early developmental years adds to the odds against the handicapped child ever fully "catching up". Therefore, as a BEH-funded Outreach Project, we sought out others with a similar *commitment* to find and serve handicapped preschool children. We have worked out cooperative relationships with other speech and hearing centers . . . with public school systems . . . private day care centers . . . university training programs . . . the State Department of Education . . . medical professionals . . . and many others talented and committed people along the way.

More than that, Head Start is the only systematic approach to serving a significant portion of America's preschool children. And, since 1972 and the passage of a bill that some of you may have voted for, Head Start has been working very hard, in my opinion, to increase services to the handicapped, while maintaining it's services to non-handicapped children.

Our early outreach services to Head Start took the form of workshops for Head Start staff. We focused on meeting the special needs of Head Start children with communication problems emanating from hearing, speech, and language impairments. We also assisted Head Start teachers in defining individual plans appropriate to specific handicapped children in Nashville and in Tennessee.

As we have become more closely involved with various Head Start programs and professionals, we have learned a great number of things. One of the things that has been striking to us—and to the Head Start people we know—is the unmet need to determine, by some thorough and systematic basis, the *specific* types of problems of *specific* children.

Some kinds of handicaps are quickly seen. Others are more difficult to find. Some handicaps appear to be harmless in the earliest stages, but if the condition is left untreated, a child's total way of living—will be adversely affected. Thus the importance of screening—THE EARLY WARNING SYSTEM of meeting the challenge of a handicap. I would, at this time, like for you to see a slide show that we produced at the conclusion of an experience that still leaves me in awe—the screening of a group of running, laughing, sometimes yelling, occasionally crying, talkative and not-so-talkative, happy and not-so-happy children—over 5000 of them ; all of them children being served in Tennessee Head Start programs.

This 20-minute program, like the screening project, was produced as part of an collaborative effort of the Office of Child Development (OCD), the Bureau of Education for the Handicapped (BEH). After the audio-visual presentation, I would like to answer your questions and to tell you, briefly, what we are doing this year and . . . more importantly, I would like to share some of key points we have learned in the process and how they relate, specifically, to the discussion being held here today.

With your permission, Mr. Chairman, let us start the show.

SLIDE-TAPE PROGRAM—"HEADSTART SCREENING—THE FORK IN THE ROAD"

In late 1974 and early 1975, over 5000 Tennessee Head Start children were screened. Of these 504 were referred for further assessment with a break-down as follows:

Hearing impairment	122
Deaf	4
Severe speech and language problems	354
Voice problems	19
Cleft palate	2
Severe behavior problems	3

In this next year (1975-76), as one of the 14 projects collaboratively funded by BEH and OCD, the Outreach Project is expanding the Head Start screening effort. Four States will be included—Florida, Kentucky, North Carolina and Tennessee—involving service to 35,000 children. The plan is to use indigenous Head Start and other resource personnel by training them to carry out the screening process.

In summary, Mr. Chairman, ladies and gentlemen, my judgment regarding screening of children for handicapping and potentially handicapping conditions is—

1. Screening should be done:
   - It covers hitherto undetected problems:
     - 18% of 5500 Head Start children in Tennessee had serious communication problems.
     - 7% of 2589 other preschool Tennessee children failed hearing screening.
   - It provides the basis for early intervention with handicapping or potentially handicapping conditions:
     - Thus maximizing the chance for habilitation of the child's problem.
     - And saving tax dollars by reducing the requirement for highly specialized and extended educational management.
2. Screening mechanisms must be *effective:*
   - Valid and reliable techniques are available.
   - Requires professional supervision.
   - Requires monitoring mechanisms.
   - Requires getting screening close to children.
   - Requires creativeness and inventiveness to overcome problems.
3. Screening should be *comprehensive:*
   - To maximize use of resources.
   - To reduce overlap.
   - Requires coordination of health education services.
4. Screening should be done *early:*
   - The earlier, the better for hearing, vision, and developmental problems.
   - Public schools are rapidly extending downward their responsibility.
5. Problem in screening is *manpower:*
   - Use trained professionals to supervise professionals in training.
6. Screening is worthless and possibly even detrimental unless *appropriate diagnostic* and *treatment services* are in place:
   - Barriers of professional "turf" need to be broken down.
   - Screening facilitates getting service systems in place.

In my opinion, the development of comprehensive, early screening programs can increase the effectiveness, timeliness, and productivity of our entire service delivery to those children with special needs and to all children.

Thank you for this opportunity of sharing our experiences with you. We hope you find them useful in your very important task of shaping national policy.

Mr. LEHMAN. Thank you very much.

I just have one question. That is, in all this early screening, all this early identification, are we going to get some opposition or some concern about the stigma or early labeling of the stigma of such early screening if we broaden it beyond, say, vision or other kinds of physical handicaps? Even vision can be, I know, a difficult thing to deal with without preidentifying short of labeling a child as a difficult learning problem child and then have low expectations from him and also create, as I say, the stigma of the labeling? Do you sense any community resistance to such a program because of this particular possibility?

Mr. **Barad**. I will try to answer that, if I may.

I do not see this as a problem. For example, even those who are severely visually limited or impaired, or indeed the totally blind, are today integrated in public school programs. In fact, it is not that I am trying to speak for New York City, but in our particular situation they are on registers of the regular class teacher and then come out to the resource teachers for assistance, or equipment, or tutorial work that might be necessary.

I would also point out that we have among the visually impaired students who are doing very good work and these youngsters are running the whole gamut of types of special programs.

Mr. **Lehman**. I am not questioning their ability to be integrated or their ability to perform. I do not think it is a valid concern, but I just wonder whether there is a concern in the community among the parents or any other groups that would offer some resistance to such labeling or the inherent stigma that would apply to the child.

Mr. Paraskeva, would you like to proceed? As long as I have to live with it, I would like to get reaction from my own district.

Mr. **Paraskeva**. Right. The statement of a stigma to some extent will exist regardless of the type of disability. However, special education—exceptional child programs, as Mr. Barad pointed out, do try in every way possible to eliminate the stigma; so that recognizing this would be a problem, then seeing how this youngster can operate in the same world, but without the necessary correction, without the necessary amelioration; this could never be possible.

Mr. **Lehman**. Most parents want their child to be just like every other child.

Mr. **Paraskeva**. Right.

Mr. **Lehman**. The more ways you have to separate that child from the mainstreams, the more concerned the parent often becomes.

Mr. **Paraskeva**. Yes.

Mr. **Lehman**. Even though you are trying to do something for the child at the same time?

Mr. **Paraskeva**. Yes. That is why we accentuate the positive, try to put the accent on the positive part of the program, the kinds of things the kids can do, versus the things that the kids cannot do.

In other words, given the youngster with glasses, with large print books, he takes these books right into the mainstream, right into the regular program, uses these, then gets the resource help that he needs to ameliorate the school problem.

Mr. **Barad**. Proper identification and proper followup, Mr. Chairman, would eliminate the types of problems that Mr. Rangel referred to earlier in the hearing. So that perhaps other types of problems will be prevented and therefore, true stigma will be avoided because these youngsters would have been put into types of programs for which there was no real need or reason.

Mr. **Lehman**. Just to expedite a bit, I would like to call on Mr. Miller now.

Mr. MILLER. Thank you, Mr. Chairman.

Just to follow up that point a bit, do we know to what extent the children who are classified and placed into special education programs, programs for the retarded, emotionally disturbed, to what extent a number of those children may in fact have physical impairment, visual, hearing or otherwise, who end up being placed in those programs?

Do you have any studies or work done in that respect?

Mr. PARASKEVA. If I may answer that.

Mr. MILLER. I would like an answer from all of you as you represent all different areas of the country.

Mr. PARASKEVA. Right, and yet it is so similar in implementation. The visually handicapped youngster could be found within cerebral palsy, mental retardation, deafness. We do not necessarily categorize a youngster, we do not try to categorize them. But the visual problems exist so they cannot open to their fullest potential even with the primary deficit.

In other words, the kid with cerebral palsy, sure, needs the materials and equipment that are going to help him with the cerebral palsy, but then added to that, he is going to need the large print materials.

Mr. MILLER. Let me be sure you understand my question.

The question is the mislabeling of a child because the child has physical impairment that could be picked up in screening but is not because screening is not existent. It therefore becomes a behavioral problem and he starts through a whole track of events, emotionally or physically oriented, that we are seeing in rather unfortunate circumstances for the children over the next 8 or 9 years of their educational life. That is my concern.

It is not that he is receiving other services, but the fact that they are excluded from the mainstream where they could have been included had they been picked up in a screening program. That is my concern.

Mr. HORTON. I would say the incidence of mislabeling, particularly as it regards mental retardation, as confused with sensory impairments, is relatively high in my own professional experience, which has been about 22 years. I have worked with some more than ten children who, because of sever hearing impairment which was not detected and not labeled, were categorized as mentally retarded, and several of those were institutionalized.

I think this is an extremely important point. I think the specification of a child's problems early, the specification, the description of them, and the appropriate treatment so as to avoid mislabeling, is extremely important for the welfare of the child and his family and his chances to optimize in the future.

Mr. MILLER. Could you refer this committee to any studies that have been undertaken in this regard that might be helpful to us?

I was not here for the previous panel, but I have read their testimony. They are very concerned about cost. I suggest we may be spending——

Mr. HORTON. I think the most inclusive studies and the most recent, of course, are Dr. Hobbs' studies on the "Futures of Children" and

"Problems of Classification and Labeling," two volumes which came out in 1975, which speak to that very extensively.

Mr. **Miller.** Thank you.

Anybody else?

Mr. **Barad.** No.

Mr. **Miller.** That is all the questions I have. Thank you very much for your testimony.

Mr. **Risenhoover.** Mr. Goodling?

Mr. **Goodling.** I suppose I have several statements and perhaps a question or two.

I do not have any problem with preschool proper screening by properly certified, trained people. In fact, in my estimation it has to be done there as well as first grade. I have no problem with some Federal support or a sharing of support in those areas. I do have real problems with the followup and I think any legislation would have real problems with the followup, in the Congress of the United States, unless we determined who it was that we followed up with after the initial screening.

In fact, if I were a member of the medical profession, I would be very concerned about the whole followups, because I take issue with the statement of unfounded fear of the Federal Government. I do not think there can be unfounded fear of the Federal Government.

I am sure if it were not the Congress, the bureaucracy would surely come up with the rules and regulations by which you would play the game and how much you would charge and where you would do it and how you would do it. I am as sure of that as I am that I am sitting here.

So I think somehow or other we have to work legislation where we are sure we have done a proper screening job, but then I think it is a new ball game when it comes to followup. I think in order to get it through Congress, it would have to be a followup in relation to the individual's ability to pay, et cetera. I just do not see how—for instance, I can conceive in my own case, for instance, now it is time for contacts. It would depend how this followup business was written whether we got into that ball game. That would be a synthetic thing rather than a true need. But I think it will have to be divorced, once you get beyond the screening, in relationship to who, then, is available to receive the followup services.

I think the screening is very important, properly done, preschool, first grade, and now of course, until we catch up with them, beyond that. But the followup I think is going to present a real, real problem for any type of legislation, if it goes beyond the usual type thing that we do with Federal money for those who qualify.

We took all of our ESEA title I money and did just what you are saying, used it all in preschool clinical evaluations and followup. That was the whole use of the money. But I think going beyond those people, followup is going to present a real problem if it is written into the legislation.

Mr. **Barad.** I would like to make one comment if I may.

It is not unreasonable to expect that a good part of the followup can be done by people who are also doing the screening. It is a little unrealistic to expect that the more professionally skilled people will be involved in the followup, the nurse, the school doctor and so on, but people just below that level can be and have been instructed to continue the followup type of work.

Mr. **Goodling.** But you see, the definition of followup, as I see it, is going to be the sticky issue, because all the screening in the world will be useless unless something is done about it.

Mr. **Barad.** Agreed.

Mr. **Goodling.** But if you talk about followup, actually, the treatment, the glasses, whatever, the operation, whatever it may be, then it is going to be a real sticky issue if it is open to the masses.

Mr. **Barad.** I agree with the comment that you seem to have implied, or at least I inferred from a comment you made earlier, that there has to be a limit and, in the case of the Congressman's daughter, I believe it was, one would not expect that the Congressman's daughter or my daughter would be getting—would be the beneficiary of a program for eye care when I as a parent or you as a parent should bear that responsibility.

Mr. **Goodling.** The legislation does not say that.

Mr. **Barad.** That is right.

Mr. **Goodling.** And this is my concern.

I have no further questions.

Mr. **Miller.** Mrs. Horton, with the 35,000 kids that are going to participate this year, this school year——

Mrs. **Horton.** Yes.

Mr. **Miller** [continuing]. What kind of followup will be done with them?

Mrs. **Horton.** We are building into the planning of this screen the planning at the initial stage with the agencies that are responsible in those States for followup service, both diagnostic service and the followup treatment service. Beyond that we, concurrent with this whole screening effort, we have the upgrading of the skills of the Head Start teachers themselves to deal at least in an ameliorative fashion with certain aspects of the problems that these children demonstrate, to support the more specialized services.

But in the planning of the screen, the followup services are being put in place as they are available in each of these States and as they are subsidized through public or other funds.

Mr. **Miller.** So if you find some 3,500 children, based upon your Tennessee Head Start experience, these 3,500 children, given the impairment, whether it is hearing or speech problems, voice problems, as you found in the Tennessee experience again, they would be referred to the various agencies for which either they are eligible or have responsibility?

Mrs. **Horton.** That is right.

Mr. **Miller.** Those who are not eligible for Federal-State aid programs, they are referred to whom, to their family?

Mrs. **Horton.** Head Start has allocated in its money the money for the handicapped effort. Of course, they have a 10 percent mandate for the inclusion of handicapped children into their program. They have allocated moneys available for those followup services to children who are not otherwise eligible under other titles or other resources.

Mr. **Miller**. This program will only go to Head Start children?

Mrs. **Horton**. The one I am describing includes only Head Start children, yes; funded by the Office of Child Development, region 4.

Mr. **Miller**. When will your findings be completed on that?

Mrs. **Horton**. We anticipate we will be finished with the screening at the end of January.

Mr. **Miller**. Can we have a copy of that when it is done?

Mrs. **Horton**. Yes, and I will be glad to share with you a copy of the Tennessee report.

Mr. **Miller**. I would like that.

Mrs. **Horton**. We are interfacing with all the graduate training programs in each of these States to advise them of it, to solicit their cooperation, utilization of their advance graduate students in these areas, professional preparation, and all of the State and local agencies that serve handicapped children.

Mr. **Miller**. I would like very much to see that.

Thank you.

Mr. **Risenhoover**. I have just a couple of brief questions before we get into the slide presentation.

What is the cost per student that you estimate for the outreach program that you are planning for Florida, Kentucky, North Carolina, and Tennessee?

Mrs. **Horton**. We have been funded at $68,000, our region 4 Office of Child Development. That is being coupled with some BEH funds.

I would anticipate that we probably would expend about $20,000 of BEH funds. So the total cost, while we have not accomplished it yet, the total budget is in the area of $88,000.

Mr. **Risenhoover**. Considerably less than $3 per child?

Mrs. **Horton**. Yes. That involves four areas of screening.

Mr. **Risenhoover**. In your opinion, are programs in existence that would adequately identify these children?

Mrs. **Horton**. Are they presently in existence?

Mr. **Risenhoover**. Right.

Mrs. **Horton**. Well, if I take the experience of Tennessee and our experience in the Head Start children there, I would say the programs are in existence, but I guess I am reiterating what you said earlier, apparently something is happening because we have a high percentage of children who had not been detected through other programs through which they had moved.

Mr. **Risenhoover**. Then you would say no?

Mrs. **Horton**. Yes; I guess so.

Mr. **Risenhoover**. Okay.

For all three of you, are there presently programs in place that would deal with the followup in so far as taking care of the problems that are discovered for children whose parents cannot afford to do whatever needs to be done—purchase glasses, operations, whatever is required. Are there programs presently in existence to deal with those underprivileged or lower-income children?

Mrs. Horton first, and then we will come across.

Mrs. **Horton**. Are there presently programs in place to deal with them?

In the State of Tennessee through Crippled Children's Service part of the State Department of Health, they include service to children with communication problems. However, because of budgetary restrictions, they have had to reduce the number of children that they will serve. They have set rather stringent criteria. So there are programs in place but apparently the services are not available to all of the children for whom those programs were originally intended.

Mr. **Risenhoover.** Very well.

Mr. **Barad.** I think you are aware of the fact that for those who are medically eligible, quite a bit can be done. For those who just miss the medicaid eligible category, we have a problem.

Mr. **Risenhoover.** Very well.

Mr. **Paraskeva.** We, too, have a problem; there is no essential coordinated comprehensive program at this time. There are the scattered services, but nothing comprehensive.

Mr. **Risenhoover.** Mr. Goodling expresses a concern of a Member of Congress, you know.

We do not want to make a program available that would just take care of everyone. There are obviously some students, some parents, some children who have the resources to take care of their own problem: for those who do not, and I suspect the Congress would look at this on a cost-effectiveness basis, for those parents who cannot afford the treatment?

Mr. **Barad.** I make the suggestion that when people do costing and this type of calculation, or estimating or "guesstimating," that they must remember, and I think it was pointed out by the gentleman from the American Optometric Association, not all the time do I agree with them, but on this point it should be emphasized that we have some youngsters who will be seen in a screening program, an overwhelming percentage of them will need no further service.

Mr. **Risenhoover.** Right.

Mr. **Barad.** Then there will be some who will need a minimum of service. Then there will be those who will need a considerable amount.

So by merely taking a figure, what is the public school population in grades 1 to 6 and multiplying it by some figure is fraught with danger. We may very well start averaging apples and oranges.

Mr. **Risenhoover.** I think we got into this earlier when we heard the figure of $800 million. I think that is excessive. But you know that is the way we scare programs away, that is one of the tactics used.

Let's get on with the slide presentation.

[A slide presentation was made. The scropt follows:]

[SCRIPT]

"Headstart Screening—The Fork in the Road"

Almost everyone understands the *basic* idea of the Head Start program. It is, in a word, to give a "head-start" to some children who would otherwise fall quickly behind because of disadvantaged backgrounds. The need for such a "head start" is intensified when the children have learning handicaps. Few people realize the extent of the Head Start responsibility. It is, in many cases, the only chance to catch potential handicaps before they begin their work of undermining a child's progress in life. Those handicaps will certainly be recognized in later years. But . . . if the same handicap can be identified in the early years . . . and the right instructional adjustments made . . . then that hindrance, at least, will be removed from the child's path.

For this reason, the discovery of potentially handicapping conditions becomes a critical fork in the road. Teachers and administrators are only fooling themselves if they assume that they are succeeding because "everything seems all right so far." Part of Head Start's responsibility to each child is the discovery *of handicapping and potentially handicapping conditions*. Some of these handicaps appear harmless enough at the beginning but can impact a child's educational progress in years to come. It's easy enough to see *some* handicaps. If they are physically obvious, then we do not hesitate to identify them . . .

. . . and arrange for whatever extra educational benefits are needed. But many children have only the *beginnings* of . . . language problems . . . or problems with hearings . . . or the production of understandable speech . . . or eye-hand coordination.

Any of these problems can be potentially as handicapping as . . . blindness . . . or cerebral palsy. However, they cannot be readily seen. They are not usually diagnosed except by a trained professional. In fact, a speech articulation problem may sound like cute baby talk when a child is three or four . . . but . . . it can handicap tremendously in later life. Problems of hearing and of language comprehension can simply keep the child from receiving the information intended for him. In the early years, a child with delayed language or a hearing deficiency . . . may be lovingly patted on the head and called "*that inattentive* child who cannot follow instructions." But . . . the accumulating years of not getting the message are going to add up to an educational handicap of significant proportions for that child.

Two children start out in a pre-school class together. One child has an obvious physical disability . . . which is recognized immediately and compensated for from the very beginning. That child is on the road to steady educational gain. But his classmate may have a less obvious problem. Perhaps he is delayed in understanding language because of limited experiences. His problem may go untreated for years. His teachers may not know what to do for him. Finally, the problem . . . will be identified somewhere down the line. Even though special effort is then made to "help the child catch up" . . . there is no way to ever compensate for those early years. Unfortunately, the incidence of these potential handicaps is not "few and far between." In fact, their presence in *Head Start* children is statistically even more likely than among other groups. The Head Start child is particularly at risk with regard to his communication skills. The research indicates, however, that early identification of these problems and appropriate educational adjustments can provide ample opportunity to compensate. The earlier the intervention is begun, the more promising the outcome.

Head Start programs have an official responsibility to find and provide for handicapped children. They are also charged with providing an educational program to counteract these potentially handicapping conditions. It's easy enough to say that every child should be tested for potential speech and hearing problems. The task of screening thousands of children who are scattered across . . . hundreds of square miles may seem impossible . . . but it has been accomplished by the Tennessee Head Start programs. Because of the initiative of Tennessee Head Start personnel working in collaboration with BEH projects and with the cooperation of local coordinators for the handicapped, the Tennessee project was able to . . . screen over 5000 children . . . scattered from the Mississippi to the Great Smokey Mountains . . . in both rural and urban settings of some 20 Head Start programs. A broad expanse . . . over-whelming task but one that was achieved for the most part without cost to Head Start. By locating and cooperating with agencies already responsible for such testing, Head Start was able to meet its needs. . . . For example, Head Start located one agency which was funded by the Bureau for the Education of the Handicapped to find children with handicapping conditions. Another agency was already funded to find, test, and provide for the communication handicaps of children in medically indigent families. The task of the Head Start administrators became one of finding and coordinating . . . rather than starting from scratch on so great a task. They knew that one of the first tasks would be to find enough qualified staff to conduct the screening. The testers would need to be professionals in speech pathology and audiology.

It was quickly realized that graduate students in speech and hearing would be the ideal helpers, and would, themselves, benefit from the experience. What better way to get first-hand experience with normal child development, diagnostic procedures, and the needs of Head Start children. Meetings were arranged with the appropriate education officials to gain the assistance of graduate students in speech and hearing. In some cases the testing experience was even added to the requirements of clinical practice in speech pathology and audiology. A coordinator for the screening program was appointed. This coordinator met with the students and explained the project. A schedule was arranged which would provide a team of five workers for every week of the screening effort without any students having to be away from classes over a week. To keep everyone working together, the step-by-step procedures and responsibilities of each helper in the project were written down and distributed to all workers. Each person knew exactly what to do for anything that might come up.

One of the next problems was to set up testing sites and schedules for the 20 programs. Such a job would be impossible for any small staff except for the fact that . . . each Head Start program already had someone in each program in charge of coordinating programs for the handicapped. These coordinators were all called together in a meeting. The program coordinator outlined the needs for each area . . . but the success or failure of the entire effort was in the hands of the local handicapped coordinators. Each local coordinator had to find the right kind of testing site. One which would be centrally-located with regard to the centers to be tested. A testing center for screening hearing has to be away from train tracks, interstate highways, and other noise-makers. Facilities with carpets and drapes are, of course, preferable since the children themselves can be classified as noise-makers.

Each local coordinator of handicapped services was also responsible for arranging the transportation for all the children. It was up to the local coordinator to arrange for volunteers to take care of the children who were waiting to be tested . . . and to control the flow of children in and out of the test areas. Besides the details of setting up the tests . . . there were always . . . special needs to be attended to. The local coordinator was responsible for making the hotel arrangements for the visiting staff of screeners . . . and even for making sure that the screeners didn't get lost in the unfamiliar countryside on the first morning.

Prior to the test period, the local coordinator was responsible for getting the . . . Head Start teachers to fill out the identifying information section . . . at the top of each child's screening form. Every task was important . . . and because the workers all knew the importance of early identification of potential handicaps . . . they were willing to work extra hard to make the screening project a success. Every small detail . . . contributed toward the eventual discovery of learning handicaps in young children. The testing equipment to be used in the state-wide screen had to be reliable and dependable . . . and easily moved from place to place and set up in a hurry. Test results had to be accurate and reliable . . . but capable of rapid, efficient use, scoring, and explanation. After considering the needs and limitations of the test situation, the following portable test battery was assembled. For hearing: portable electronic audiometers. For speech: first, the experienced ear of a speech pathologist. Then . . . if there's any question about the child's speech ability, there is a more involved test of articulation.

Language development is screened quickly by getting each child to repeat thirteen specially-worded sentences, representing the sequence in which the structure of language is usually developed. This simple test checks the child's ability to repeat what he hears, because children repeat using their own language structure.

Visual-motor skills were tested in the Tennessee screen by a simple test of visual-motor integration, which not only tested the child's eye-hand coordination for copying simple designs with a pencil but also is a recognized predictor of academic success later on. The visual-motor skill results were very revealing. The majority of the Head Start children showed up as deficient in early skills of eye-hand coordination. At the end of the testing week at each site, the results were reviewed and recommendations made for each child. A child might pass all four areas of screening. His form would look like this . . . or the child might need more complete testing in hearing, speech articulation, or language. Sometimes the problem does not yet warrant special testing, but a special "Teacher Alert" is indicated. This tells the teacher that special attention is needed . . . that the child needs experiences focused on this area of weakness. Most Head Start children tested *did* need extra teacher help to develop their visual-motor skills. This points up a pressing need for Head Start teachers to begin emphasizing activities that will give the children a chance to catch up in these areas.

Probably the most critical moment of the entire screening program occurs when the test results are returned to the child's classroom teacher by the coordinator for the handicapped. The teacher has, at this point, a wonderful opportunity to see a child's educational future change for the better. By taking aggressive action to secure the special help the child requires, a teacher can make the future bright. The teacher herself becomes the most important link. She understands that a child's educational future can depend on early help. She is willing to do whatever is necessary for the referral to be carried out. She eagerly assists parents in making and keeping appointments with the referral agency. The teacher will do whatever it takes to get the child the help he needs. And she does it because she knows that the test results are the fork in the road for that youngster . . . it is the point at which a handicap can be counteracted . . . maybe even eliminated altogether. Everyone connected with Head Start . . . parents, teachers, administrators . . . is dedicated to placing the child's well-being first. This . . . is the time of great opportunity . . . time to do whatever is necessary to get the child the special attention that is needed. It will mean some inconvenience and special arrangements for the parents . . . and providing the special training methods to counteract the potential handicap. The discovery of special needs also provides a great opportunity to the Head Start administrator. Year after year there will be new crops of children in Head Start.

The administrator's job takes real meaning when programs are arranged which will discover and remedy learning handicaps. Early detection of potential handicaps is the "fork in the road" of a young life. As parents . . . as teachers . . . as administrators . . . we have obligations to the child. *869* children were located who had communication problems serious enough to require help. That is *18* percent of the Head Start children tested.

Of these, *339* had severe problems that required specialized and intensive help from a speech pathologist. *187* children with apparent hearing problems were located. *101* of these children were confirmed on testing to have clinically significant hearing losses. This number included *4* children who were deaf. *36* percent of the Head Start children tested needed special teacher assistance with the development of their eye-hand coordination. A total of *2519* children needed help . . . that's more than half of the children tested. That's *2519* children who now have the opportunity to overcome their handicaps . . . before these handicaps block their opportunities. The data from these tests will be analyzed to discover implications for the regular Head Start teacher working with any child. And for the handicapped coordinator working specially with handicapped children in Head Start. The benefits will go far beyond the identification of handicaps. The findings will influence child health, general education, and even parent training.

Such a screening program provides a great opportunity. And the beauty of it is that every Head Start program has the components already available. There are already agencies funded to find and care for handicapped and indigent children. There are graduate students in the universities. The sites for testing are available for the asking in every community. And any state's Head Start personnel can be coordinated into an effective screening team. Early identification of potential handicapping conditions is the fork in the road that will make a difference every day of the child's life.

Every Head Start child deserves the opportunities that we can give him. Early identification of handicaps is the first step . . . the necessary prelude. But discovery of a problem must be accompanied by immediate, decisive action to bring about a solution. A fork in the road is a great opportunity . . . but only for those who choose . . . and follow . . . the right path.

Mr. RISENHOOVER. That is very good.

Mr. Miller, do you have any further questions or observations?

Mr. MILLER. Simply I would like to thank the witnesses. I think education is very hard to argue with although I am sure there are those who will. I hope that this committee will continue to take additional evidence on this need.

I assume one of the criticisms of this program is that it is yet another categorical program. I would hope that some day we would have a comprehensive program for all of these children and I think that is the only criticism that may be found with this. Thank you very much.

Mr. RISENHOOVER. I thank all of you for sharing your experiences with the committee this morning and I would like to make one observation in closing.

I hope that we will see the time when all the Federal agencies and departments of the agencies will avail themselves of facilities that are available locally as well as the Office of Child Development does in using the money that we appropriate for them.

If more of the agencies would get as much out of those dollars as Child Development does, then the Congress would be much more receptive to these programs and money would be appropriated to do the job that needs to be done without a lot of this difficulty.

So thank you very much.

Mrs. HORTON. Thank you very much, Mr. Chairman.

[Whereupon, at 12:13 p.m., the committee adjourned.]

[Material submitted for inclusion in the record follows:]

STATE OF ILLINOIS DEPARTMENT OF PUBLIC HEALTH,
December 9, 1975.

Representative CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary, and Vocational Education, Committee on Education and Labor, House of Representatives, Congress of the United States, Washington, D.C.

DEAR REPRESENTATIVE PERKINS: Thank you for the opportunity to testify via this letter on H.R. 4092, the "National Comprehensive Vision Care Act of 1975." I apologize for responding so late, and hope my remarks are nevertheless still relevant to your committee's considerations.

This Bill, if enacted would provide uniform vision screening standards and consistent follow-up procedures nationwide. This is most worthwhile.

In Illinois, vision screening has been the responsibility of the Illinois Department of Public Health since 1963. The mandate for vision screening in Illinois is contained in the School Code, and was sponsored, in part, by the Illinois Society for the Prevention of Blindness. A joint professional committee representing both ophthalmology and optometry recommend screening standards and periodically review the growth and direction of the program. The program has grown so that in fiscal year 1975, better than 1½ million children were screened by trained and certified vision screening technicians. Of these children, over 90,000 were referred for an examination by an ophthalmologist or an optometrist. The extent of our coverage indicates that the vision screening program is one of our more effective programs. In the recommended grades (kindergarten and the odd numbered grades), 95.6 per cent of all eligible children were screened for vision problems in fiscal year 1975 as part of our vision screening program. It has served as a low cost, viable, effective means of identifying suspect children, and referring them to eye doctors.

Screening all children yearly as provided in the bill, rather than less frequently as we do in Illinois, would reach more children and identify those whose vision may change rapidly. However, vision screening is not a substitute for a complete eye examination. Although many parents feel that if a child receives a vision screening test, the child has been "examined". Vision screening tests should not substitute for periodic eye examinations by qualified eye doctors.

H.R. 4092 would provide a source of funding for our program in Illinois. As previously stated, the vision screening program is already reaching most school-aged population in the State. In Illinois the vision screening program screens not only public schools, but covers independent, private, and parochial schools as well. I would hope that these non-public schools would also benefit from this mandate. H.R. 4092 appears only to include public school children.

The provision of follow-up services (ophthalmologic and optometric services and eyeglasses) is the weakest link in our existing program. Once a child is referred to an eye doctor, the responsibility rests with the parent to secure the examination. For approximately sixty-five per cent of the children referred, the cost of such an examination can be borne by the parent in Illinois. This may not be the case nationwide. For public aid recipients (fifteen per cent of the Illinois children) these services are provided through welfare agencies. In some areas, various charitable groups or service clubs help with the provision of these services. In other areas, no such group is available to provide this service. Provision of complete follow-up services, including examinations and glasses, to *all* children referred by statewide screening would alleviate the problem of locating such services. It would however, be expensive.

If patients cannot succeed in obtaining access to follow-up services now, funding this way may generate new resources. As stated, 20 per cent of our children "fall between the cracks" and this bill would certainly help them in a way we cannot. The Illinois means test approach is all we can finance at this point because of revenue problems—you may have to go this route nationally if the people and Congress are unwilling to foot the bill.

Although I support this bill, I am opposed to continued fragmentation of care through additional categorical approaches and would much prefer incorporation of vision care for all children and payment for glasses in a national health insurance bill as a matter of right.

If we cannot have the whole loaf at this moment in time, I would certainly hope H.R. 4092 can be passed and am prepared to testify in support of this position if you believe I can be of assistance.

Your sincerely,

JOYCE C. LASHOF, M.D.,
Director of Public Health.

MARSHALL B. STADT, O.D.,
Citrus Heights, Calif., October 28, 1975.

Congressman CARL D. PERKINS,
Chairman, Committee on Education and Labor, House of Representatives, Washington, D.C.

DEAR CONGRESSMAN, PERKINS: This letter is in response to your letter of October 14, 1975 which requested a statement from me regarding specific types of health screening as well as comment on H.R. 4092—National Comprehensive Vision Care Act of 1975.

I would at the outset like to apologize for submitting this commentary past the date requested which was October 22, 1975. Unfortunately, I did not receive the communication until Monday, October 20th, and I needed some time to gather my thoughts.

It is indeed a pleasure for me to have an opportunity to respond to your request for input. I have now had a chance to review the bill as well as some of the testimony given. Attached you will find my statement. Please feel free to call on me if further clarification is needed on it.

Sincerely,

MARSHALL B. STADT, O.D.

You have asked me to respond to your letter by submitting information regarding my experiences with screening, my views on the advantages and disadvantages of all screening, and any views I might have on H.R. 4092.

My experience in vision screening encompasses a time span from November 1964 to the present. During that time I have been actively engaged in the development, delivery and administration of vision screening programs in many parts of Northern California. The majority of programming during that time has and continues to be carried out with the active cooperation of county and district offices of education. I have also worked with pre-school programs such as "Headstart" and parochial schools in the delivery of vision screening services. During the last four years I became very interested in the vision problems of children enrolled in migrant education. During that period I was able to institute summer programs in which children of migrant workers were able to receive comprehensive vision screening, diagnostic and treatment services in many areas of Northern California. The uniqueness of these services was in their mode of delivery. These services were delivered in the field with referral being made for those cases that truly required specific and special attention for conditions which fell outside the scope of the program. The number of children I have been able to reach over the past eleven years probably exceeds 60,000.

The initial reaction of many school administrators and school health consultants was one of great interest. They soon found that there were professional people who were willing to provide vision screening services, willing to work with educators and other professionals involved with school health, willing to provide rapid and accurate identification procedures for detecting vision problems, willing to work with specified criteria for referral and willing to serve as vision consultants to the schools.

Some reluctance toward change from the minimum standard vision test (Snellen eye chart) used to a more comprehensive method did occur in a number of districts. This reluctance was often due to budgetary constraints imposed by existing educational programs for which funding commitments had already been made. Funding for Comprehensive vision screening programs are usually paid from the district or county general school fund. Some schools have been able to utilize provisions within certain Federal school legislation to supplement special kinds of school health programs with broader scope health screening programs. Needless to say, the continuance of comprehensive vision screening programs that now exist is in serious jeopardy. School health screening programs are not top priority items in the general educational schema. This is especially true now with the current pressures on boards of education to broaden education programs in order to maintain teacher and administrator positions as well as meeting salary demands.

Some local professional people have in some cases exerted political pressure to prevent the establishment or continuance of comprehensive vision screening programs. However, in many of these instances better vision programs have been established because the arguments really camedown to concerns for who might see the referrals from such a program as well as concerns for challenges to traditional professional lines of authority. These egocentric attitudes have probably established more new comprehensive screening programs than they have destroyed. The downgrading of these types of programs through the reflection of these provincial attitudes can only be viewed by educators as attempts to maintain the status quo. Consequently, the question of "How can we as educators assist in finding methods of detecting vision problems in our children effectively, efficiently and economically?", never seems to get answered.

Comprehensive vision screening seems to be very well accepted in concept in both Northern and Southern California, and with few exceptions has had a lasting beneficial effect in school settings.

There are a number of advantages for screening children for vision, hearing, developmental defects as well as other problem areas. Early detection and referral for further evaluation and/or treatment allows for the chance that the school age child will have better education as well as better health and a sense of well-being. Screening programs might bridge the gap between complete care and infrequent care. In some cases screening programs serve as the monitoring vehicle for the continuity of care of a child's health problem. In many cases a health screening will be the only contact the child will have with the "health care system" as we now know it. Because of the high mobility of families today, on-going screening programs can identify problems in new students in the communities and can assist in direction of these people to appropriate health resources.

Establishing screening priorities for specific types of health problems based on incidence, severity and cost become major concerns as well as the problem of the delivery of all of the selected services within a specific time period at a specific site. Vision and hearing tests have been selected by many states as mandatory programs in schools because of their direct relationship with the learning process. The incidence of vision and hearing problems is so high that it has not been difficult for many public agencies to select these sensory defects as priority items for early detection. The nature of vision defects lends itself to the screening process. Comprehensive vision screening is a great asset to early detection of vision problems because it is fast, accurate, and largely objective in nature.

I can think of several disadvantages to health screening. Screening for health problems without prompt and efficient follow-up can be a tremendous waste of professional and paraprofessional resources time and cost. Sometimes discovery of defects which are then reported to the child and/or their parents causes great difficulty because back-up resources are not accessible to the family due to cost, geography etc. Another major disadvantage to many screening programs that are being developed today is that they lack elements that encourage fundamental reform in our health care system. Screening programs that attempt to identify problems in children using existing traditional community resources as the major mechanism make the job more complex than it often need be. This is especially true of vision and hearing defects. In general few segments of the population present themselves to preventive care programs. This is true no matter how accessible the detection program. Screening services provided by Well-Child Clinics of public health departments, and by public or private agencies that use community churches or centers penetrate very poorly into the population. These agencies carry the stigma of care for the poor. Sometimes churches serve as psychological barriers themselves for some people. Private providers are not preventive care oriented since well people do not generate good economics in their practice.

Some mention should be made here about program costs for comprehensive vision screening. Although professional time cost may vary in different areas of the United States, overall funding for the service component of this type of screening should amount to $3.00 per child. It would be difficult for me to estimate the administrative cost for vision screening services if it were to be solely in the hands of government agencies. If such programs, however, were administered by private corporations such as vision services groups, optometric foundations, pre-paid health groups or similar types of organizations, their costs would probably not exceed $3.00/child. This would have to include the hiring of qualified staff, establishing contractual arrangements with professionals, EDP systems for monitoring the management information function as well as the required reporting to the responsible government agencies.

H.R. 4092 would go a long way to establishing some fundamental reform in our health care system. It is my hope that such legislation would have as part of its intent that available funding by HEW be channeled through State Departments of Education instead of State Departments of Health. The use of school settings should greatly reduce the need to develop and administer expensive outreach programs since children in all states are required to attend school. Effective penetration into child populations can only be reduced by absenteeism, waivers from parents, disenrollment etc. These areas are already monitored by county and district offices of education.

I would suggest one change in the legislation itself. Page #3 Section 3. (b) Line 5: . . . . . . Such panel shall be composed of four ophthalmologists four optometrists, one educator and one public member who by virtue of their training and experience are especially qualified to advise the Secretary with respect to such standards.

MICHIGAN OPHTHALMOLOGICAL SOCIETY,
Lansing, Mich., October 6, 1975.

CARL D. PERKINS,
Chairman, House of Representatives, Committee on Education and Labor, Subcommittee on Elementary, Secondary, and Vocational Education, Washington, D.C.

DEAR CONGRESSMAN PERKINS: I have had the opportunity to review H.R. 4092 as introduced by Congressman Charles B. Rangel in the House of Representatives, March 3, 1975. I am pleased to know of the interest in vision screening, and I sincerely hope the bill accomplishes what you wish it to do. For twenty years I have been chairman of the Eye Care Committee for the Michigan State Medical Society, and have acted in an advisory capacity to the Michigan Department of Health in its extensive school and pre-school vision screening program. For nearly that same length of time I have served The National Society for Prevention of Blindness, on a committee dealing with eye health of children. Perhaps these two organizations have more experience in school and pre-school vision screening than any others in the world today.

Several things have been found to be fundamental to a successful screening program. Professional people should not be involved. Screening should be kept as simple as possible. Screening on alternate years is ideal. Pre-school screening is highly desirable. Children who are under the direct care of a physician or an optometrist need not be screened. There is no such thing as perceptual and developmental *vision* screening.

Perceptual and developmental problems, as all knowledgeable physicians and educators know, represent neurological or psychological variants requiring evaluation and management by special educators, and occasionally by psychologists, psychiatrists, neurologists or pediatritions. They are certainly not problems to be dealt with in an isolated fashion by ophthalmologists or optometrists.

I note that H.R. 4092 suggests an advisory panel composed of four ophthalmologists and four optometrists. Hopefully this might be modified to include a school health director, a pediatrician, and an expert in visual screening from the National Society for the Prevention of Blindness. Ninety per cent of the ophthalmologists and optometrists in this country know very little about vision screening as it is carried on in the school systems. Certainly these people should be available in an advisory capacity, but the mechanics of screening are better handled by people with experience in this field. Actually no one with a vested interest should be involved in screening.

I sincerely hope that these suggestions will prove helpful, and as a fellow Kentucky Colonel, I want to compliment you for your interest in vision screening.

Respectfully,

ROBERT T. BLACKHURST, M.D.,
President.

ROBERT J. CROSSEN, M.D.,
Grosse Pointe Park, Mich., October 10, 1975.

CARL PERKINS,
Rayburn House Office Building,
Washington, D.C.

DEAR REPRESENTATIVE PERKINS: I am writing to you as Chairman of the Sub-Committee on Elementary, Secondary, and Vocational Education regarding the subject of screening of school children.

I have been a practicing Ophthalmologist in the city of Detroit, State of Michigan for 25 years, and have been active in teaching at Wayne State University and the University of Michigan, as well as a member of the Eye Care Committee of the State Medical Society for the past 10 years. Our primary concern at all times is the visual performance of our school children where-by they have tools to properly learn and progress with their education. In Michigan we feel that all visual screening and we do have a state passed pre-school vision bill, should be handled by the State Health Department and its eye care section. At any time that ophthalmology and, or optometry enter into vision screening one must consider that there are economic factors involved, and potential personal gain to those involved. We would urge you very strongly to pass legislation assisting the State Boards of Health, and their Vision Care Sections in implementing the plan for pre-school and school vision training with Federal Funding as needed. An advisory committee may include both ophthalmology and optometry but actual performance must be kept free of any professional direct contact.

House Bill #4092 with its recommended amendments would allow a group of practitioners to get economic gain. Once again with the direct bill, I feel that state control of this function, federal advisory funds, and organization for those states needing it, would be the best performance for the future of school screening and improved visual performance by all of the school children in the United States.

Sincerely,

ROBERT J. CROSSEN, M.D.

FRANK J. WEINSTOCK, M.D., INC.,
Canton, Ohio, October 8, 1975.

Hon. CARL D. PERKINS,
Congress of the United States,
House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN PERKINS: My background in screening is as follows: I am a board certified Ophthalmologist, the former Ophthalmology consultant to the U.S. Public Health Service basically in charge of establishing vision screening guidelines and supervising research in screening activites, a clinical assistant professor in Ophthalmology at Ohio State University College of Medicine, chairman of the Medical Advisory Committee of the Ohio Society for the Prevention of Blindness and the chairman of the Child Health Committee of the American Association of Ophthalmology.

I am convinced that vision screening is absolutely essential for children. I have helped establish these programs for the past eleven years and have taught principles of vision screening to Ophthalmologists for the past eleven years.

However, I am opposed to H.R. 4092. First of all, in an enlightened 1975, many more children are having screening of complete eye examinations at this time, either privately or through the schools.

In many communities the screening is carried out by the school nurses or by voluntary agencies such as the Prevention of Blindness Societies at no charge or additional expense to the parent or the government.

Although I agree 100% that it is essential to detect vision problems as early as possible in order to correct those which are amenable to therapy, I disagree with the implied detrimental effect that these problems will have on their education. The mention of learning ability open the Pandora's box of perceptual testing etc. which is not proven, is very controversial, would increase the cost of these programs to unrealistic levels and most likely would decrease their availability to below current levels.

The preschool age is the most profitable time to detect remediable problems.

Periodic, rather than annual testing is much more logical. Some tests such as color vision which has no effect on learning but some effect on future vocation would only have to be performed once during the school years.

Prior to establishing such legislation, I would suggest a study to delineate the present availability of vision screening, the quality, the need and the best way, to achieve the desired goals. This would include the availability of Ophthalmologic, Optometric, and voluntary services which would enable the provision of these services.

The basic concepts in vision screening involve use of non-professionals to do the screening in order to not imply that the screenee had a complete eye examination and that there be adequate follow up facilities available prior to instituting the program.

For the reasons stated above, I oppose H.R. 4092, but whole heartedly support and admire your concern for the health of our children.

Sincerely yours,

FRANK J. WEINSTOCK, M.D., F.A.C.S.

THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA,
Washington, D.C., October 13, 1975.

Re: Bill H.R. 4092.

CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary, and Vocational Education, Washington, D.C.

DEAR MR. PERKINS: The Section on Ophthalmology of the District of Columbia Medical Society wishes to express its concern regarding Bill H.R. 4092 introduced by Mr. Rangel and referred to the Subcommittee on Elementary, Secondary, and Vocational Education. As Ophthalmologists we are especially concerned about the medical eye care of the children of our nation including visual screening of school children.

Many of us as eye physicians have had experience in visual screening involving young people especially while serving with the Armed Forces. Many have volunteered their sevices as advisors and planners in school childrens' visual screening programs. These programs are set up throughout the country usually carried on by Prevention of Blindnes personnel, state or local Public Health Services and school nurses assisted by volunteer parents or interested civic groups.

Any visual, screening program will have its advantages and disadvantages. On the favorable side, it offers a relatively fast, reasonably accurate method of screening a large group of children to rule out major medical visual defects. If any are found, the parents can be advised to take the child for a more complete eye examination. These tests can and should be kept very simple so as to include visual acuity and some form of muscle balance test. As regards screening of school children, properly conducted programs on a volunteer basis, plus a few paid workers to assure proper organization, will result in proper coverage of all school children at the least possible expense. Disadvantages of any screening program may include (1) poor organization of the program, (2) too elaborate or intensive an examination so that only profesionally trained personnel can conduct the screening. Small children do not respond well to elaborate testing techniques. Simple, fairly sort testing, is preferable since a childs attention span is often brief, (3) too extensive an examination would of necessity increase the cost of the screening program, (4) unless the screening program is directed in every jurisdiction of the nation by highly qualified personnel under strict guidelines by the panel, it will fall short of its goal.

As regards Bill H.R. 4092 "National Comprehensive Vision Care Act of 1975" we concur in the findings of Congress as listed under Sec. 2 paragraphs (1), (2), and (3). However, under Sec. 3 certain portions of the bill raise serious concern:

(1) The reference to "annual vision tests" under clause (1)(A) of subsection (a) and the statement "a State shall give priority to tests and services for students in the first six grades of elementary school"; clause (2) of subsection (a) which requires annual testing of all children in public school grades 1 thru 6. Ideally a preschool screening program would allow earlier detection of visual defects; however it would be virtualy impossible to get all the preschool children into the program. A properly conducted visual screening examination at the first grade level should be sufficient to carry out the intent and purpose of this bill as stated in Sec. 2. Under properly established guidelines, visual defects and borderline cases, when found, should receive sufficient medical guidance and follow-up to assure good medical eye care.

(2) Clause (1) (B) of subsection (a) "will provide without charge appropriate necesary follow-up services". We eye physicians are of the opinion that if those children who require follow-up services have parents who can afford the care of private doctors, they should be allowed to continue under their care. This would greatly reduce the total cost of the program.

(3) Clause (2) subsection (a) "training of personnel to administer such tests". Rather than training a large number of personnel, we feel that there are many volunteer personnel already performing screening programs throughout the country who could be utilized for this purpose. Volunteer personnel would lower the cost of the program.

(4) Subsection (b), establishing a panel to advise the Secretary of Health, Education, and Welfare, that panel should contain a majority of Ophthalmologists. Standards for eye and visual screening tests should be established by eye physicians, i.e. Ophthalmologists, whose years of special training establish them as experts in this area. Ophthalmologists are specially trained to recognize and treat diseases of the eye and visual pathways. Therefore, the greater weight of these decisions should fall on their shoulders. In the establishment of any eye care program it is essential that judgment concerning medical eye diseases and visual neuro muscular functions be the responsibility of the Ophthalmologist. Optometrists are trained to measure the refractive error of the eye and to prescribe corrective lenses. For that reason, Optometrists should have some input in determining standards of visual tests.

The section on Ophthalmology of the District of Columbia Medical Society recognizes the need for properly administered visual screening programs. In the interest of manpower and funding of the visual screening program, utilization of ongoing volunteer programs by responsible organizations should be continued and encouraged. In areas where these facilities are not available, steps should be taken to implement them. Also, we feel it is most important to have a panel of professionals, with the majority of the panel being Ophthalmologists, to set up guidelines for the administration of any visual screening program for the children of our nation. Funding should be limited to the visual screening program, as follow-up examinations and treatment expenses in most cases will be covered by private funds, Medicaid, or other Federal, State, or Local medical programs.

We suggest that the training of screening personnel be funded under this bill.

This is indeed an important problem confronting your committee and warrants more study and oral debate by experts in this field before a final decision is reached. Representatives of this Section on Ophthalomology would welcome the opportunity to present ou rviews to your committee.

Sincerely yours,

WALTER PATTERSON, M.D.,
President.

FRANK J. PIPER, M.D.,
Syracuse, N. Y., October 11, 1975.

Re: H.R. 4092.

Hon. CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary and Vocational Education, Congress of the United States, House of Representatives, Rayburn House Office Building, Washington, D.C.

DEAR CONGRESSMAN PERKINS: As a former general practitioner of medicine and school physician, and now as a practicing ophthalmologist, I submit the following remarks about screening in general and H.R. 4092 in particular.

A variety of screening programs are now in existence, chiefly at the state and local levels, which are concerned with detecting medical problems early (preschool and elementary school), and referring them for appropriate care. These are accomplished either by volunteers (Lions' Clubs, auxiliaries, etc.) or existing Agencies (School nurses, health departments, clinics, family physicians, pediatricians, and School physicians). Referral and follow-up care is then provided through present channels with financial responsibility covered by parents when possible, social service agencies, or existing health insurance coverage (e.g., union insurance benefits).

H.R. 4092 is a bad bill. It is disguised as worthy legislation, but in reality is a piece of special interest legislation. It will permit those who are untrained in medicine, nursing, and health matters and derive their income from merchandizing eyeglasses, to impose such services, whether needed or not, upon our school children. It may even serve to *delay* screening and referring health problems in the proper manner to those concerned with the *total health care* of such children.

Some 52 million pairs of eyeglasses are purchased by the American people each year. Most are needed; some are not; and many are of a luxurious nature. The cost of implementing H.R. 4092 would soon be out of sight and in the process represent a fragmented type of screening at best. Such funds, if available, would yield far greater benefits if provided for total health care problems.

Very truly yours,

FRANK J. PIPER, M.D.,
Member, Board of Directors.

MIDWEST EYE, EAR, NOSE AND THROAT CLINIC, P.C.,
Omaha, Nebr., October 14, 1975.

HON. CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary and Vocational Education, Washington, D.C.

DEAR CONGRESSMAN PERKINS: I wish to present the position of the Nebraska Academy of Ophthalmology to you as regard H.R. 4092, the bill to authorize Federal funds for Visual Screening of School children.

We do believe that visual testing of pre-school and school age children is important for the early detection of significant visual disorders. Fortunately, a great deal of such screening is currently being done very well in our State.

Nebraska's State Health Department requires visual testing of school children. This is usually performed by school nurses and Educational Service Units. Volunteer workers are often utilized.

In the past year 69 visual screening projects were conducted by the Nebraska Society for the Prevention of Blindness with volunteers from Parent Teacher Associations and Delta Gamma sorority chapters. Approximately 14,500 children were screened of which 725 required referral for professional examination and 544 ultimately required treatment. Statistics show that one child in twenty has an eye problem. Of those referred, 75 percent required treatment.

In the Omaha School Systems, school nurses perform visual screening in Kindergarten, 3rd and 6th grades. If a visual acuity problem is detected the parents are so informed. If the parents do not follow through with a professional eye exam, then the Office of Visual Impairment sees to it that the child obtains an examination. The Omaha Public Schools have a privately funded program to provide eye glasses for needy children.

In addition to the above screening efforts, all children are required to have a physical examination before entering grade school. This examination includes a test of visual acuity.

I trust that this brief summary indicates that visual acuity screening is an important function which can be conducted very well on a Local and State level using currently available resources. There are ample methods to complete this task without a need for utilizing Federal legislation or Federal revenue.

We are, therefore, opposed to the passage of H.R. 4092.

Sincerely,

JOHN T. RAMSELL, M.D.,
For the Nebraska Academy of Ophthalmology.

THE AUXILIARY TO THE AMERICAN OPTOMETRIC ASSOCIATION,
October 10, 1975.

HON. CARL D. PERKINS,
U.S. House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN: At its 49th annual meeting held June 16–21, 1975 in Hot Springs, Arkansas, the membership of the Auxiliary to the American Optometric Association unanimously passed the following resolution:

Whereas, vision is one of mankind's most precious gifts and as such is a major factor in the efficient functioning of all Americans at work and play; and

Whereas, the professional care of the vision system is a primary health service contributing to the health, welfare, productivity, and personal safety of every American; and

Whereas, optometrists are educated and licensed to render professional vision care services in all 50 States and the District of Columbia; and

Whereas, utilization of the specialized skills of optometrists in local, state, and national health care programs can result in maximum convenience and quality eye care for beneficiaries of such programs; and

Whereas, the Congress of the United States is now considering enactment of a national health insurance program that is comprehensive in nature; Now, therefore, be it

Resolved, That the Auxiliary to the American Optometric Association memorialize the United States Congress to make adequate provision for optometric examination, diagnosis and treatment of conditions of the vision system for persons of all ages in any national health insurance plan.

We will appreciate your attention to and consideration of this resolution.

Sincerely,

MRS. JAMES L. SPENCER,
President.

CHARLES C. MORLEDGE, M.D.,
Billings, Mont., October 10, 1975.

Mr. CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary, and Vocational Education, Congress of the United States, House of Representatives, Washington, D.C.

DEAR MR. PERKINS: In reference to H.R. 4092, I am experienced with visual screening in so far as being a practicing ophthalmologist and I see cases that have been screened and then referred for an eye examination.

Currently the visual screening is very adequate, training of parents being given under the auspices of the National Society for the Prevention of Blindness and the screening being done in the school. This costs nothing to the parent of the child or to the child and the National Society for the Prevention of Blindness makes no charge to the best of my knowledge for training lay people in this visual screening.

In my opinion there is no need for the screening for developmental defects, the important criterion being the ability to read the Snellen chart.

Perhaps there are some special interest groups that want free visual training and followup care instituted but currently I have serious reservations that there is a need for it, at least in our community.

I polled 15 other ophthalmologists that are in practice in various parts of Montana, both the smaller communities and the larger, and the unanimous opinion was that it is not necessary to enlarge on the screening program or have a different method of funding it. The National Society for the Prevention of Blindness is a charitable organization and receives contriibutions but they do not base the availability of their services on whether or not a locality has contributed to the best of my knowledge.

The Montana Academy of Ophthalmology would go on record as being opposed to the principle of H.R. 4092 on the above basis.

Sincerely yours,

CHARLES C. MORLEDGE, M.D.,
President, Montana Academy of Ophthalmology.

ARNOLD SHERMAN, O.D., F.A.A.O., F.C.O.V.D.,
Merrick, L. I., N.Y., October 16, 1975.

Hon. CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary, and Vocational Education, Washington, D.C.

DEAR MR. PERKINS: Thank you for the opportunity to express my opinions regarding H.R. 4092 and visual screening in general.

I am a practicing pediatric optometrist and an Associate Clinical Professor of Optometry at the State College of Optometry, State University of New York and a vociferous opponent of the vision screening methods now being used in most school systems (Snellen acuity).

May I submit the following paper published in Optometric Weekly, September 4, 1975 as my current view of what screening is, what it should be and what we can expect for each child in America if undetected vision problems are found and treated early in life.

Sincerely,

ARNOLD SHERMAN, O.D.

Enclosures.

[From Optometric Weekly, Sept. 4, 1975]

VISION SCREENING OF SCHOOL CHILDREN: TIME FOR A CHANGE?

(By Arnold Sherman, O.D.)

It is time the schools got away from the old chart-on-the-wall procedures in visual screening and utilized professional exams

The importance of good vision to the development and education of children is widely accepted. All states report that some vision screening is done for their children.[1]

The two main objectives of a vision screening program for children are: (1) to detect those children who have vision problems or potential vision problems that may affect the physiological or perceptive processes of vision, and (2) to find those children who have vision problems that interfere with performance in school.[2]

SCHOOL PERFORMANCE

Although these two objectives overlap, they often are totally different. Some vision problems may affect school performance (poor ocular-motor control) and not affect the visual welfare of the child, while other problems may not affect school performance (amblyopia or myopia), but may be a threat to the visual welfare of the child. Screening procedures must detect both types of problems. Thus far, vision screening procedures have succeeded in finding children in the latter category because of the way they have been mandated.

For example, New York mandates monocular and binocular Snellen acuity at distance. This limited type of screening usually accomplishes the antithesis of objective: to find those children who have vision problems that interfere with performance in school. Snellen acuity screening tends to find myopic children, and myopia has been shown to be no obstacle to school success and tends to be more prevalent in achieving students.[3] [4] [5]

Most authorities agree that a complete vision examination, performed by an optometrist or an ophthalmologist, for each child prior to entering school would be most desirable. This would ensure that every child would use his maximum visual capability in his educational opportunities. Vision problems would be detected and treatment instituted at an early age, if all children had a complete vision examination before undertaking their most important educational task: learning to read.[6] [7]

A COMPLEX PROCESS

Undetected vision problems may increase stress, decrease achievement, and cause behavior problems. Vision is a complex process and because of its complexity, there is no screening instrument that can measure adequately all of its aspects. For example, vision skills that have been mentioned as important for academic success include: visual acuity, binocular coordination, stereopsis, ocular-motor control, accommodative (focus) accuracy and flexibility, visual form perception, visual memory, directional orientation skills, and figure-ground relationships.

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[1] Belloc, N. B.: School Vision Screening in the United States. Sight Saving Review, 18, 4. (1962)

[2] Ibid.

[3] Spache, G. D.: What Teachers Should Know About Vision and Reading. Opt. Weekly, October 20, 1966.

[4] Wold, Robert M. and Wilson, Keith W.: School Vision Screening Implications for Optometry. Opt. Weekly, May 28, 1970.

[5] Coleman, Howard M.: An Analysis of the Visual Status of an Entire School Population. Amer. Opt. Assoc. J., 4194. April, 1970.

[6] Robinson, H. M. and Huelsman, C. B.: Visual Efficiency and Progress in Learning to Read. University of Chicago Press, Chicago.

[7] Flax, Nathan: Problems in Relating Visual Functioning to Reading Disorder. Amer. J. of Opt., 47(5), May, 1970.

The optimum screening program would be one which could detect every child in need of professional attention, and one which would not have any unnecessary referrals. Practically, this ideal screening program is impossible, for any screening test also is designated for statistical validity. It must produce correct results for a particular percentage of cases.

Even the most statistically efficient screening program reported in the literature (the Orinda Study) missed 2 percent of the children needing visual attention, according to the standards proposed, which were limited to the physical aspects of acuity, ocular health, refractive error, and muscle imbalance.[8]

CLASSIFICATION

1. *Correct-referrals.*—Children who fail screening tests and who are found by subsequent professional examination to need visual attention.

2. *Over-referrals.*—Children who fail screening tests but are found by professional examination not to be in need of visual attention.

3. *Under-referrals.*—Children who pass screening tests and are found by professional examination to need visual attention.

4. *True non-referrals.*—Children who pass screening tests and who are found by professional examination not to need visual attention.

A highly efficient screening procedure implies that referrals, with as few exceptions as possible, be found in need of professional attention. Over-referrals and under-referrals are screening errors. Unfortunately, too many studies of vision screening tests have attached too much emphasis on eliminating or reducing over-referrals, and very rarely call attention to the much more important under-referral. Each under-referral suffers in years of under-achievement due to unsuspected decreased visual efficiency.

NOTHING WRONG?

Parents, educators and children tend to believe "nothing is wrong" because the child has passed a vision screening. Fortunately, there are enough informed and conscientious teachers and school nurses who often refer children on the basis of observable symptoms for a complete professional eye examination, regardless of screening results.

It is interesting to note that in a group of 50 learning-disabled children, as defined by referrals of psychologists or educators,[9] only approximately 10 percent of them would have failed the Orinda-type screening, yet all of these children had vision problems.[10]

So even the best screening method reported misses large numbers of children urgently in need of optometric care in the areas of fusion and accomodative difficulty, ocular-motor control, and vision perceptual dysfunction. Modern screening methods exist. The Rosner-Richman Perceptual Survey,[11] the Houston Perceptual Screening, and others screen skills that relate to classroom performance.[12]

CONCLUSION

1. Every child should have a complete vision examination prior to entering or returning to school.

2. Vision acuity testing is not sufficient to determine the child's ability to use his eyes successfully and efficiently in school. Therefore, a screening must include the followng areas as a minimum:

   (*a*) Visual acuity at distance and at near point monocularly and binocularly.
   (*b*) Fusion ability at distance and near point.
   (*c*) Accommodative ability and accommodative flexibility.
   (*d*) Ocular-motor control and accuracy.
   (*e*) Form perception and reproduction.

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[8] Blum, H. L., Peters, H. B., and Bettman, J. W.: Vision Screening of Elementary Schools: The Orindo Study. University of California Press, Los Angeles.

[9] Sherman, Arnold: A Review of Visual Screening of School Children. Brit. J. of Physiol. Opt., Vol. 27, No. 1 (1972), pp. 29–42.

[10] Sherman, Arnold: Relating Vision Disorders to Learning Disability. Journal of the Amer. Opt. Assoc. Vol. 44, No. 2, February 1973, pp. 140–41.

[11] Rosner, Jerome and Richmond, Vivian: Manual for the Rosner Perceptual Survey (RPS) and the Rosner-Richman Perceptual Survey (RRPS). Mental Health Division, Board of Education, Pittsburgh, Pa.

[12] McKee, Gordon: Houston Perceptual Screening. University of Houston College of Optometry, Houston, Tex.

3. A screening of this type would take approximately 15 minutes.

4. Any child not performing academically should be referred for professional evaluation regardless of screening results.

5. A report of the child's vision evaluation should be sent to the school and must include fusion, ocular-motor, accommodative and perceptual results as well as acuity, refractive error, and eye health findings.

6. Optometrists and ophthalmologists must take the initiative in order to improve vision screening programs.

It is now time to move ahead of and away from the archaic card-on-the-wall screening procedures used for the past 50 years while millions of children suffered from undetected vision problems. Our children deserve the best we have to offer, regardless of the price tag, regardless of inter-professional jealousies, and regardless of the recalcitrant, old established way.—*State U. of N.Y., 122 E. 25th St., New York, N.Y. 10010.*

EAST PORTLAND EYE CLINIC,
Portland, Oreg., October 13, 1975.

CARL D. PERKINS,
Rayburn House Office Building,
Washington, D.C.

DEAR REPRESENTATIVE PERKINS: This letter is written in opposition of H.R. 4092, a bill to authorize grants to states for the establishment of vision screening programs for public school students.

At first reading, the bill looks helpful and innocuous and certainly everyone agrees with the need for vision screening of school students.

In opposition of H.R. 4092 please consider the following:

1. Grants of money need not be made for screening of central visual acuity since the cost of a wall chart is quite inexpensive and teachers, nurses, and volunteers are already adequately performing the function. (Some people are eager to use expensive machines promoted by salesmen or to do four or five additional tests which are time consuming and nonessential.)

2. Twenty-eight states already have laws requiring vision screening, and most other states have state health department and state departments of education recommendations for screening which are carried out.

3. Similar legislation to H.R. 4092 did not pass out of the education committee earlier this year in Oregon, since schools are successfully complying on a voluntary basis following state "recommendations for annual screening". Furthermore, a proposed perceptual screening in Oregon was recognized as inappropriate.

4. Proposed amendments for "developmental and perceptual testing" gets into a very gray and controversial area which would spend time and funds to generate information hardly needed by the schools. Such screening would serve only to funnel children into expensive training programs (often costing $1500 to $2000 per child) as seen by non medical eye practitioners with the false hopes of altering the child's classroom performance through developmental eye training.

Such screening might falsely handicap a child by labeling him with a perceptual disorder. This is not an eye practitioner's diagnosis or screening area, it is an evaluation to be made by teacher testing.

5. Considerable long standing and continuing public education is widely available regarding the importance of children's vision screening, especially at preschool for amblyopia. Consequently, many charity and service groups (for instance National Society for the Prevention of Blindness, Lions Clubs, Readers Digest Foundation, funding to distribute free home eye tests) are doing a fantastic job of making vision screening available to all.

Let's keep this area free of federal spending since such a fine teacher, nurse, and volunteer system exists throughout our states.

My background is one of great concern for children. I practiced pediatrics before limiting my specialty to ophthalmology. I volunteer time in refresher courses for nurses, teachers, school health aids, and volunteers in the eye health and sight screening areas. I also teach a course to specialized teachers at Portland State University entitled Vision in Education. With this background I know well how very unnecessary and inappropriate "developmental vision and perceptual" screening would be. I encourage legislators to recognize the successful workability of vision screening as presently being conducted by teachers, school and public health personnel, and volunteers.

Sincerely,

BARBARA J. ARNOLD, M.D.

TENNESSEE STATE ACADEMY OF OPHTHALMOLOGY,
Knoxville, Tenn., October 14, 1975.

MR. CARL D. PERKINS,
Rayburn House Office Building,
Washington, D.C.

DEAR MR. PERKINS: The Tennessee Academy of Ophthalmology opposes H.R. 492 for several reasons.

We have had vision screening in the elementary schools in Tennessee for several years. However, we have found that children primarily need to be screened at age 3½. Waiting until children are school age will often result in cases where amblyopia will not be discovered until the child is too old to be helped.

We have also found that in visual screening that there is no differentiation made to the patients as to optometric services and medical eye care. Many times children with medical problems are referred to an optometrist in the state of Tennessee, when they should be referred to an ophthalmologist.

I feel the optimum age for visual screening should be age 3½, at the start of school, and every two or three years thereafter. Also, in the referrals of these children, their parents should be told the difference between optometric services and medical eye services.

I feel that this bill on a national level would not improve what is presently being done by the State Health Department in the State of Tennessee.

Sincerely,

THOMAS A. CURREY, M.D.,
President.

AMERICAN OPTOMETRIC ASSOCIATION,
Washington, D.C., October 20, 1975.

HON. CARL D. PERKINS,
U.S. House of Representatives,
Washington, D.C.

DEAR CONGRESSMAN PERKINS: On behalf of the American Optometric Association, we would like to thank you for holding hearings on the issue of vision screening. Members of the panel representing the American Optometric Association reported back on your keen interest in this matter.

We know that good vision plays an important role in learning, and your interest in helping to identify children in the school system with poor vision is commendable. I am sure after your review of what is presently existing in the way of federal programs, you and your Subcommittee will strongly propose a reorganization of priorities and program format for the Department of Health, Education and Welfare.

H.R. 4092, or any type of vision screening bill was downgraded because it was termed as being too categorized. I believe after my encounter at the state and local levels that the better description is fragmentation. If provisions for a vision screening program are categorical and should not be implemented, then what can you do to help consolidate federal programs that all purport to have vision screening programs.

If there is any additional information the American Optometric Association can supply, we would be most happy to provide it by request. We would also like to commend the efforts of Mr. Stan Sadlak—his interest and handling of this matter has been most invaluable and appreciated.

Cordially,

H. P. WINTON, O.D.,
President.

UNIVERSITY OF WISCONSIN HOSPITALS,
Madison, Wis., October 21, 1975.

HON. CARL D. PERKINS,
Chairman, Committee on Education and Labor,
Rayburn House Office Building, Washington, D.C.

DEAR CONGRESSMAN PERKINS: I am writing to you in regard to the bill H.R. 4092 which would authorize federal grants to the States for the establishment of vision screening programs for public school students. I am a pediatric ophthalmologist on the full time faculty of the University of Wisconsin School of Medicine and am chairman of the State Medical Society's Section on Ophthalmology Committee for liaison with the State Department of Public Instruction. I am also a member of the Medical Advisory Committee to the Wisconsin Society for the Prevention of Blindness.

I was very pleased to read bill H.R. 4092 since it has, apparently, received little publicity in this area. The purpose of the bill, to provide funds for the screening of visual defects in school aged children is certainly needed and would be of great benefit to the people of this and the other states. Vision screening is, at best, presently haphazard and of variable quality. The need to detect all children with vision defects as well as other handicaps has been obvious and is recognized under Title XIX of the Social Security Act which requires early and periodic screening for children under its support. H.R. 4092 would extend this to children not entitled to Title XIX benefits, however, not to younger, preschool children. It is a well known medical fact that the younger the age at which an ocular problem is detected, the more likely the condition is to be correctable. For this reason I would like to urge that children age 4 years and older be considered under this law.

H.R. 4092 indicates that funds be made available by the Secretary of Health, Education and Welfare for establishing and operating vision screening programs and for the training of personnel to administer the tests. I would like to suggest, for the sake of economy and prevention of duplication, that the National Society for Prevention of Blindness, which has many years of experience in screening millions of children aged 4 years and older, be designated by the Secretary to assist in this program. Vision care providers around the country recognize this organization as the leader in vision screening and its record for detection and referral has not been equaled by any other program in the world.

H.R. 4092 also would provide grants for providing, without charge to the patient, appropriate, necessary, follow-up care. Since this would, presumably, cover the cost of medical and surgical care of children with ocular defects, I would suggest that the cost of this program could become excessive unless certain guidelines are adopted concerning what is considered "necessary care". Eye muscle problems constitute the major cause of poor vision (amblyopia) in preschool and school aged children and account for about 10–15 percent of all ocular surgery. The cost of such coverage by a federal program would certainly run into millions of dollars.

In conclusion, I would like to urge you to support a bill that would provide vision screening for the children of our country but am hopeful that the points I have raised will be taken into consideration before H.R. 4092 is brought to a vote.

Sincerely,

Thomas D. France, M.D.,
Chairman.

State University of New York,
State College of Optometry,
New York, N.Y., October 10, 1975.

Hon. Carl D. Perkins,
Chairman, Committee on Education and Labor, Subcommitee on Elementary, Secondary, and Vocational Educaton, Rayburn House Office Building, Washington, D.C.

Dear Mr. Perkins: It is my pleasure to submit my views on visual screenings of school children. The State College of Optometry believes that a bill such as H.R. 4092 is long overdue. The experience gained by the State College of Optometry, and its clinical facility, the University Optometric Center, one of the largest eye clinics in the nation, substantiates the need for vision screening and followup provisions for school-age children.

The importance of vision in man's social and academic environment makes the quality of vision care vital to both health maintenance and educational development. Vision problems produce adverse effects on persons of all ages but these effects are most acutely observed in the younger segments of the population. Younger age groups by virtue of vision's primary role in the learning process, problems of reduced visual acuity, poor binocular coordination or lags in visual perceptual development can seriously impair the learning ability of a youngster considered normal in other respects. When vision defects are discovered at an early stage and treated, serious impairment and its consequences may often be prevented.

Ideally, every child should have a complete vision examination every year. However, realistically, cost and manpower constraints may prevent the attainment of this goal. Vision screening programs for school-age children, by trained personnel, is one method by which children with vision problems can be identified and referred for follow-up care. Vision screening programs provide a means of obtaining eye care for children who otherwise would not be checked. The schools provide a natural locale for screening of children.

The University Optometric Center of the State College of Optometry has, since its founding, been concerned with the care of the needy and disadvantaged. Wtih the advent of the Medicaid Program in 1966, and because of our closer clinical involvements with the Department of Health of the City of New York in the programs of audit, nursing homes, etc., the leaders of the Department (Drs. Brown, Bellin, O'Rourke, Houghton, Kavaler, Alexander and others) urged us to attempt to extend and expand our screening services in the schools with major and particular emphasis upon the schools which were in the ghetto and disadvantaged areas. During 1974, we screened a total of 3,723 children. Private and special educational schools are continuously requesting assistance in the organization and implementation of a vision screening program.

Results of current screenings, performed by the State College of Optometry, substantiate the need for proper screening programs. Out of 1,716 children screened from public and parochial schools, 597 or 35 percent were referred for visual problems.

Some schools have exercised their option to bring the children needing follow-up care directly to the clinics of the University Optometric Center. This affords the opportunity for a controlled follow up. A typical example of screening results can be shown for the screening of P.S. 108 in Manhattan (East 108th Street and Madison Avenue). Of 154 children screened, 71 children were referred for follow-up care (46 percent). At present, 41 children, representing 58 percent of the 71 children have been examined. Of the 41 children:

1. Twenty (20) of these children were given a first Rx of a high degree (myopic astigmats, and hyperopic astigmats). Within this group, several children (5) had visual problems compounded with strabismus or amblyopia necessitating the need for follow-up therapy.
2. Seven (7) children required modified prescriptions of a significant degree. Also, three (3) of these cases had amblyopic and astigmatic complications.
3. There were five (5) cases requiring no Rx but a direct referral for visual therapy due to strabismus or suspected visual perceptual insufficiencies.
4. Six (6) children needed no change in prescription because the change was of a slight degree, not resulting in a significant increase in acuity at distance or near.
5. Three (3) children were in need of no visual care.

Some implications can be drawn: (*a*) Despite Snellen screenings done within the school, 78 percent still had visual problems of a significant degree requiring professional attention; and (*b*) there is an obvious need for an ongoing and controlled followup procedure.

The visual testing done by the University Optometric Center of the State College of Optometry in schools consists of a modified clinical battery of tests to assess visual acuity, organic problems, eye movement control, focusing ability (speedy and accurate shifts in visual inspection with instantaneous clarity at differing distances), eye teaming ability, eye-hand coordination (the ability to visually direct and coordinate hand and body activity), and visual form perception (in some instances).

The majority of tests in this battery were drawn from the Modified Clinical Technique (M.C.T.), a design recommended for vision screening in elementary schools by the *Orinda Study*.[1] This study, conducted by a multi-disciplinary team of optometrists, ophthalmologists, educators and school administrators, found the M.C.T., consisting of visual acuity tests, cover tests, retinoscopy and opthalmoscopy, to be the most efficient and effective screening method. "It was the only screening method that discovered essentially all the children with visual abnormalities who needed professional attention, and with minimum needless referrals."

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[1] Blum, H. L., Peters, H. B. and Bettman, J. W. (1959), *Vision Screening for Elementary Schools: The Orinda Study*, University of California Press, Los Angeles, 1.

The Orinda Study, as well as a 1957 publication, *The North Carolina Study*, by C. R. Kelley,[2] found Snellen visual acuity testing to be inadequate. Kelly concludes: "The misconception that the Snellen chart will do an effective job of screening out children who need visual care, is a major block in the road of those who are trying to establish good visual screening programs. The fact is that any school which relies on the Snellen Chard alone as a screening method, will fail to detect large numbers of children in urgent need of visual care."

Kelley's statement is supported by a 1954 paper entitled, "Standards for Referral of School Children for an Eye Examination"[3] prepared by the New England Ophthalmological Society which found in a survey of its members that the majority of practitioners "regarded the Snellen test alone to be insufficient for school testing."

A 1972 United States Department of Health, Education and Welfare publication also found significant visual problems other than acuity in a survey of 7,119 children aged 6–11. Two out of every five children had marked degrees of heterophoria and one child in fourteen had strabismus, approximately two-thirds of which was latent.[4]

In addition, a 1972 study of Adolescent Health in Harlem found eye trouble to be the health problem most often reported by youngsters 12–17 years of age.[5] A follow-up health examination actually found vision and eye disorders to be the most prevalent condition in males, and the second most prevalent condition in females. Twenty-one percent, or slightly more than one in five adolescents in this Harlem sample had vision and eye problems.

The State College of Optometry, State University of New York, strongly supports passage of H.R. 4092. From our experience, the Snellin screenings that are presently performed in many schools, are inappropriate and fail to detect major visual problems of children. We recommend that some type of a modified clinical screening examination be developed and assessed as to its effectiveness as a screening tool. We would also recommend that grants to States include provisions for the establishment and operation of programs not only in the public schools, but the parochial schools as well. A significant proportion of all New York State elementary students attend some private or parochial institution.

If I can be of further assistance, please do not hesitate to contact me.

Sincerely yours,

ALDEN N. HAFFNER, O.D., Ph. D., *Dean.*

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., November 21, 1975.

Hon. CARL D. PERKINS
Chairman, Committee on Education and Labor, Rayburn House Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: Transmitted herein is a copy of a letter from a constituent of mine, Dr. William H. Havener, regarding House Bill 4092. I would appreciate having his statement included in the record of hearings on this legislation.

Dr. Havener is one of the outstanding ophthalmologists in the world. He is head of the department at Ohio State University. His opinion on this subject is valuable.

Very truly yours,

CHALMERS P. WYLIE,
Representative to Congress.

Enclosure.

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[2] Kelley, C. R. (1959). *Visual Screening and Child Development:* "The North Carolina Study." Dept. of Psychology, School of Education, North Carolina State College, Raleigh, North Carolina.

[3] New England Ophthalmological Society and Massachusetts Medical Society (1953). Committee Report, Section of Ophthalmology and Otolarynology. *"Standards for Referral of School Children for an Eye Examination,"* Sight Saving Review, 23, 225.

[4] Eye Examination Findings Among Children. Data from the National Health Survey, Series 11, No. 115. DHEW Publication No. (HSM) 72–1057, June 1972.

[5] Brunswick, Erick. *Adolescent Health in Harlem*, American Journal of Public Health, October 1972 Supplement.

Columbus, Ohio, *November 10, 1975.*

Chalmers P. Wylie, *Member of Congress,*
House of Representatives,
Washington, D.C.

Dear Chalmers: H.R. 4092, to establish vision screening programs for students, has belatedly come to my attention.

Although the cause of preventing blindness in children must rank with the flag and motherhood, I oppose this bill strongly for the following reasons:

1. Existing school nurse programs and principles of good teaching practice already recognize the importance of health in school performance and seek to discover sight, hearing, mental, and other health problems by means of routine testing and also by continuing classroom observation of performance. To my personal knowledge, such evaluation has been done for at least 50 years.

Enactment of this Act would be an unnecessary federal duplication of already existing programs and would add wastefully to the already unbelievable cost of government.

2. Voluntary agencies such as the National Society for the Prevention of Blindness and the Delta Gamma Sorority carry out extensive informational and screening programs on preschool children. These activities are implemented by dedicated volunteers and community donations, with the strong support of the medical and nursing professions. I do not perceive that the public is better off when personal volunteer activities are displaced by distant bureaucrats.

3. The extent to which testing is carried out can be anticipated to be inordinately prescribed by regulation and I am already aware of a push to include a variety of "perceptual and developmental" tests, which have been identified as having no scientific value in the detection of or care of eye problems.

The waste of scarce health resources in such a manner must be deplored.

4. Necessary glasses and eye care are presently supplied to most children on the basis of private purchase. Needy children already receive a considerable variety of economic help, ranging from federal aid to charitable organizations such as the Lion's Clubs.

The provision of eyeglasses to 12% of all the children in the U.S.A. and their frequent replacement as they are broken or lost (as free glasses are), would amount to a huge cost. Not even the National Health Insurance advocates want to provide eyeglasses for everyone.

5. Need for glasses DOES NOT cause blindness or eye disease. Such a false belief is widely circulated and has NO basis in fact.

I have practiced ophthalmology for 25 years and have never seen blindness caused by a need for eyeglass correction. It doesn't exist. Such a program of providing glasses would not prevent blindness. (This is in distinction to the early detection of eye disease, which is very important and which is accomplished by the presently existing systems of evaluation of schoolchildren.)

6. Selfish interests that will profit from the unnecessary additional examinations of children and from government paid eyeglass dispensing will support this bill. You are aware of the existing scandals of unnecessary and excessive charges for health care. This bill will simply increase such scandalous wastes.

In summary, this superficially laudable bill actually is a costly and wasteful regulatory proposal that offers only very limited benefits. The plea will be made that it is worthwhile if only one child's eyesight is saved. Fortunately, current community practices already meet valid needs and do not add superfluous and unnecessarily complex screening techniques and expenses.

Cordially,

William H. Havener, M.D.

Beaverton, Oreg., *October 30, 1975.*

Hon. Carl D. Perkins,
Rayburn House Office Building,
Washington, D.C.

Dear Congressman Perkins: I am Dr. R. G. Fellman, a physician specializing in ophthalmology, which is to say the care of eye and visual disorders. I practice ophthalmology in Beaverton, Oregon. I am certified by the American Board of Ophthalmology, attained my specialty training at Michael Reese Hospital & Medical Center in Chicago. I am presently on the teaching faculty involved in training ophthalmologists at the Devers Memorial Eye Clinic of Good Samaritan

Hospital in Portland, Oregon. In addition to that, I carry on an active private practice.

I have studied H.R. 4092 and wish to make some comments on it. I do think that visual screening on a mass scale is a desirable undertaking, but there is some serious doubt in my mind as to the necessity for performing this on a national level with federal funding. I have participated in visual screening programs in my own area. These have been done by volunteer groups and in my opinion they do a satisfactory job. An improvement in the organization and more uniformity in these programs is perhaps desirable. There is good reason to believe, at least in the State of Oregon, that within a very short time appropriate statewide programs will be available. My own experience with visual screening procedures is that they are simple, that they are easily learned by lay persons who are not otherwise associated with eye care, and that in fact, since we are indeed dealing simply with screening procedures, these lay persons often do a better job than do professionally trained persons such as ophthalmologists or optometrists. In addition to this, the use of lay persons substantially reduces the cost of such programs, but in my professional judgment in no way impairs the program's effectiveness.

In general, on the basis of my experience as a practicing ophthalmologist as well as my experience in screening programs, I feel that it is visual acuity which is most in need of screening. Programs involving screening for strabismus (crossed-eye problems) and other medically recognized disorders, become excessively complex, do not address disorders which are frequently found in the public in contrast to visual defects, and are not generally useful as screening procedures. The establishment of programs to provide screening for so-called perceptual and developmental vision conditions is in my professional opinion totally unnecessary. The evaluation of the areas of so-called perceptual and developmental visual conditions has led practitioners of ophthalmology as well as educators to the conclusion that these problems, though they do exist, are not significantly related to sight, nor are they related to the visual mechanism in general. At the very least, this is a highly controversial issue and its inclusion in a bill of the type that you are considering is, I believe, entirely unwarranted. There are indeed problems in this area, but these are problems of education and not properly problems for a visual screening program.

If the committee is indeed convinced that it is a national priority to establish some sort of a visual screening program I would suggest that H.R. 4092 as presently written, and the amendments that have been suggested by Mr. Richard W. Averill, is excessively complicated and loses sight of what screening programs should in fact be.

I would suggest a simple program that could be easily carried out in the fashion of that which was used to screen me when I went through grade school in Omaha, Nebraska, would be more than adequate and quite easy to manage. Visual acuities were checked once a year by the school nurse. Every student in the grade school starting at kindergarten and ending at eighth grade was evaluated. Those children who had abnormalities were referred for appropriate care. There was no cumbersome administrative machinery to run this program. I believe a similar program, which although I think best developed on a state or preferably even a county level, might be developed at a federal level, if a program of that scope is deemed advisable, that it can be done simply, inexpensively, and use lay people who can be quickly and adequately trained by existing personnel in the fields of general medicine, ophthalmology, and optometry.

I thank you for your consideration of my views. I apologize for not having had this material for you before your October 15th deadline, but I regret to say my awareness of this proposed program came subsequent to that date and it has been impossible for me to prepare these remarks any earlier.

Sincerely,

R. G. FELLMAN, M.D.

CHILDREN'S HOSPITAL,
Washington, D.C., October 10, 1975.

MR. JACK JENNINGS,
Subcommittee on Elementary and Secondary Education,
Rayburn House Office Building,
Washington, D.C.

DEAR MR. JENNINGS: As an ophthalmologist concerned about the visual health of the nations school children, I wish to offer comments on bill H.R. 4092 introduced by Mr. Rangel and referred to the Committee on Enducation and Labor. I am also concerned about amendments to this bill proposed by Mr. Richard W. Averill, Director of the Washington Office of the American Optometric Association.

The Bill proposes the establishment of a panel to advise the Secretary of Health, Education, and Welfare on standards for vision screening tests. Four ophthalmologists and four optometrists are to constitute the panel. This arrangement is likely to produce a deadlock on recommendations. It is doubtful that such a panel could function effectively. Some of the disagreements that would arise are foreshadowed by the "rationale" to amendment No. 10 proposed by the American Optometric Association. This "rationale" states in part that "It is essential that the first screening be comprehensive, covering the early detection of both sight and preceptual and developmental vision conditions". This suggests that the American Optometric Association has in mind a very elaborate screening test, possibly a test so constructed that only optometrists or ophthalmologists could administer it. To demonsrate that this is a reasonable interpretation, I would like to refer to the conclusions of the Orinda study (Blum, H., Peters, H. B. and Bettman, J. W., Berkeley, California, University of California Press, 1959) a much publicized work authored by optometrists which states that very concept. Perceptual and developmental visual tests should not be included in vision screening tests. Nor should professionals administer any eye screening test because this might dissuade some parents from obtaining a professional eye examination if such were in fact indicated.

Standards for eye and vision screening tests should be established by physicians with recognized expertise in this area. Disorders of the eye and of the visual system constitute the raison détre for the medical science of opthalmology. Matters relating to eye health fall within the purview of the eye physician. Optometrists should have a voice in determining standards of vision tests but control of tests designed to evaluate the performance and health of the visual organ must remain under the control of ophthalmologists. This conclusion is not only eminently reasonable, it is also absolutely essential within the context of the proposed legislation. If an impasse is to be avoided, a majority of the panel members must represent the medical profession.

I am also strongly opposed to the suggestion by the American Optometric Association that "admission to the first grade be conditioned on participation in the screening". The mechanics of secreening all preschool children prior to admission to the first grade boggel the mind. Screening tests can only efficiently be given to large "captive" populations. Kindergarten and nursery shcool classes constitute only a proporation of future first grade students. The balance of future first grade students would presumably have to be seen by optometrists and/or ophthalmogolists. These children would presumably receive an examination rather than a screening test. (The difference is great). These eye care specialists would somehow be paid by state governments for services rendered.

The inequity to the preschool children created by this plan are obvious. It would be much simpler from administrative and economic standpoints to screen all children after they have entered first grade. Nationwide, all inclusive preschool vision screening is simply impractical at this time despite its medical desirability.

Sincerely yours,

DAVID S. FRIENDLY, M.D.

STATEMENT OF JOHN F. NOWELL, M.D., ANNANDALE DOCTORS BUILDING, ANNANDALE, VA.

I wish to thank the Committee for the opportunity to submit the following:

My name is John F. Nowell. I am a physician, Doctor of Medicine, in the private practice of ophthalmology having been certified by the American Board of Ophthalmology. My experience with screening has been as medical advisor to the Prevention of Blindness Society of Washington, D.C. for nine years and to the Virginia Society for the Prevention of Blindness for the past five years. I am now Vice Chairman of the Medical Advisory Committee of the Virginia Society. I have been an officer of the American Association of Ophthalmology for three years.

SCREENING PROGRAMS

Screening for medical problems can be helpful in detecting affected individuals in a population of apparently healthy people. Screening should assume that the suspected subjects have no complaints or signs of disability and would not seek diagnostic medical examinations otherwise.

Screening programs must be properly designed to minimize both false-negative and false-positive results. Care must be taken so that people do not think that screening is a substitute for a complete medical evaluation. Therefore, "doctors" should not be the screeners, but they should be specially trained personnel.

A well designed Snellen chart screening for distance visual acuity should yield 75 percent of children six to twelve years of age who have visual acuity problems that need correction. Further refinements, such as making certain that the child does not squeeze his eyelids during the test, can improve the yield, especially among the nearsighted ones.

In the age group of elementary school children, little in the nature of preventive care can be accomplished. The image on the board or written page can be brought into clearer focus so that the child may see with less effort or may not have to guess what is written, but refractive correction of visual acuity has no effect on curing eye problems or in preventing blindness, except for amblyopia ex anopsia or "lazy eye". Visual acuity screening should be started at age 3½ in order to detect more conditions at an early age when they are amenable to treatment. Some eye diseases begin before age 3, but a significant number would be detected at a treatable stage beginning at age 3. Visual acuity testing is not accurate before age 3, but is usually reliable at age 3½ using the "illiterate E".

Ideally, any child whose vision is measured in the reduced range should be referred promptly to an ophthalmologist for medical evaluation to rule out active disease. Alternatively, all the following should be referred to an ophthalmologist for a complete eye evaluation:

Children whose visual acuity in either eye cannot be improved by refractive lenses to 20/40 for 3 years of age, 20/30 for 4 through 6 years of age, and 20/25 for over 6 years of age.

Many of the common treatable ocular diseases may be picked up on screening tests. Detecting some of them early may be life-saving. It is essential that ophthalmologists be available since a practitioner with less than a medical education and training is not qualified to detect or to offer advice concerning the absence of such diseases.

The subject of learning disabilities is a separate and distinctly different problem from visual acuity screening. Since the eyes and the visual system are not the basic cause of learning disabilities or of dyslexia, the primary responsibility in helping such children rests upon educators with the help of educational psychologists, psychiatrists, pediatricians, and neurologists. If such a child has a visual acuity problem, it should be corrected, but eye care or visual training should never be instituted alone when a child has a reading problem. There is no scientific evidence that supports the claim that the academic ability of a child with a reading problem can be improved with treatment based only on neurological organization or visual training. Such treatment, in fact, may delay the institution of proper educational help. (These are the conclusions of the American Academy of Pediatrics and the American Academy of Ophthalmology and Otolaryngology.) CHAMPUS will not pay for visual training for reading problems since it is not a generally accepted form of treatment.

The cost efficiency of a screening program to detect one medical problem is not favorable. Multiphasic screening to detect several conditions at one time while the set-up and personnel are available deserves further study.

H.R. 4092

The basic concept of vision screening is a good one and is to be supported. However, my recommendation is to vote down the bill (H.R. 4092) as written or to amend it beyond recognition. Preferably it should be rewritten.

As H.R. 4092 is written, it would provide for much more than screening. It would establish the most costly portion of a "national health service"—the provision of eyeglasses with its related prescribing and fitting services. These services for underprivileged children is already provided for by the Lions Clubs and by Medicaid. The taxpayers should not be asked to provide services for people who can afford them.

The concept of "vision care" referred to in the bill is inaccurate and misleading. Vision is the function of an organ system of the body. A function can be "cared for" or treated. Only the eye, the brain, and their related systems can be examined and treated. A more accurate title for the bill in its present form should be "The National Comprehensive Optical Services Act of 1975".

The provisions of this bill would open a pandora's box of problems that may not be readily apparent to the committee. The most important ones are the fact that school age (six years) is already too late to help some conditions, especially "lazy eye", the different disciplines of medicine and of optometry, and the controversy as to accepted forms of treatment of "learning disabilities", previously mentioned.

Amblyopia ex anopsia, or "lazy eye", results when an eye is not being used between birth and the age of six. After six years of age, the results of treatment for this condition decrease dramatically to nil.

The bill provides for a panel composed of four ophthalmologists and four optometrists. The education and training of these two disciplines are quite different.

Ophthalmologists are Doctors of Medicine whose education is based on generally accepted scientific method and medical ethics. Their post graduate training prepares them for all aspects of eye care including the prescribing of optical devices and medical and surgical treatment of the eyes.

Optometrists are non-medical practitioners whose education is based on methods taught in optometry schools with ethics that often differ from medical ethics. Many practicing optometrists do not have a doctoral degree. The title of "doctor" is one of state licensure only. Some forms of their treatment are accepted only by optometrists. There has been no evaluation of optometry school teaching by any accreditation body of people which has included ophthalmologists—the recognized authorities on eye diseases.

Optometric organizations claim that optometry is to the eye what dentistry is to the teeth—a practice separate from but equal to Medicine. This is not an accurate description of the facts. Optometrists were never a part of Medicine or the "medical team," but were refracting opticians. Dentistry was a part of Medicine, but became a separate discipline in the mid-19th Century.

The concept of "separate but equal" has been rejected in schools, and is the main stumbling block to meaningful cooperation between Optometry and Medicine. "Cooperation" as stated by organized optometric groups means that optometrists should have all the rights and privileges of Doctors of Medicine, but without the checks and balances that would be imposed upon them by Doctors of Medicine if they were truly a part of the medical team as are nurses, medical technicians, and dentists. Dentists who are on a hospital staff are subject to the rules and regulations adopted by the physicians. Optometrists have rejected this concept and require their own peer review on hospital staffs. (Veterans Administration Hospitals)

The concept of not discriminating as to type of eye practitioner has furthered the separate-but-equal concept. It is self-serving to optometrists since advice as to which practioner a patient needs has not been required to be provided with informed consent as to the differences between their education, training and services.

A new bill should be written which would set up multiphasic screening to include not only visual acuity tests, but also hearing tests, diabetes tests, and any others deemed advisable by the American Academy of Pediatrics. The panel to advise the Secretary should include pediatricians, educators, educational psychologists, and otolaryngologists.

The vision screening standards should be those of Vision Screening of Children, National Society for the Prevention of Blindness, Inc., 79 Madison Avenue, New York, New York 10016.

UNIVERSITY OF ALABAMA IN BIRMINGHAM,
Birmingham, Ala., October 27, 1975.

HON. CARL D. PERKINS,
Chairman, House of Representatives, Committee on Elementary, Secondary, and Vocational Education, Rayburn House Office Building, Washington, D.C.

DEAR SIR: I want to take this opportunity to thank you for inviting me to offer my viewpoints in support of H.R. 4092. I have been actively involved in School Vision Screening for several years and have developed a strong personal commitment to the need for the establishment of comprehensive vision screening programs for all school-aged children.

I am an Assistant Professor of Optometry at the Medical Center of the University of Alabama in Birmingham. Since coming to Alabama in 1971, I have served the University as Director of Vision Screening Services. Under my supervision, senior optometric interns provide vision screening services to 15,000 preschool and elementary school children each year. Prior to my coming to Alabama, I was heavily involved in school vision screening in both Northern and Southern California, altogether I have screened approximately 60,000 children for vision problems. I have witnessed and actively participated in the development of school vision screening programs in various segments of our population and consequently I am delighted to have this opportunity to offer my support to a bill that will make comprehensive vision screening services available to all school aged children across our nation.

THE NEED FOR VISION SCREENING

There is little doubt in anyone's mind that clear, efficient and comfortable vision plays a vital role in influencing levels of performance. This is particularly so in school children because the sense of sight is so intimately involved in the act of learning. Researchers in the field of education have indicated that perhaps as much as 95% of the learning process is dependent upon normal visual ability.

Ideally then, all children should receive a complete vision examination by a professional eye care practitioner prior to entering school, to insure that the child is not prevented from achieving up to his maximum potential as the result of an uncorrected visual disability. Most of the professional societies affiliated with vision care have launched frequent campaigns designed to inform parents of the vital role vision plays in academic performance and the need for children to receive periodic professional vision care. "Back-to-School Week" and "Save-Your Vision Week" are good examples of this continuing effort. Unfortunately the results of these kinds of efforts have not been tremendously successful since it has been found that less than 10% of children prior to entering school have never received a professional eye examination. In contrast to this roughly 25% of all school children have clinically significant visual disorders. Virtually all of these problems are correctable. Therefore, it would appear clear that a mechanism is needed that will identify the children who have a high risk of suffering from visual disorders, and insure that these children receive a thorough visual examination and treatment as indicated. Early vision screening then represents a means by which high risk children can be identified and referred for care, thereby eliminating the possibility that an untreated visual disorder prevents the child from achieving in an educational setting up to his intellectual potential.

Early academic failure in school children is frequently quite tragic to the child, and costly to society. There are many interrelated conditions that can result in academic failure and the causes are not always easily identified and corrected. There are a great many disadvantages to academic failure. When children are forced to repeat grades an increased financial burden to the taxpayer is created, not to mention the emotional and psychological trauma the child suffers. If the causes go untreated, it is not surprising that the end result is school drop-out, increased juvenile delinquency and increased unemployment. When the cause of academic failure is uncorrected health problems such as visual disorders, it is especially tragic in that the causes are most often correctable with an efficiently functioning detection system and a referral mechanism resulting in adequate treatment. H.R. 4092 represents a mechanism whereby early detection and referral of visual disorders could potentially eliminate the visually related causes of academic failure.

Vision screening, when properly done, can identify those children with vision problems. Treatment is available that will compensate for these problems and prevent the development of educational handicaps. The key is early detection for the prevention of social disability as well as the prevention of health complications resulting from untreated vision problems.

Adequate vision performance affects the whole child and can be assured by adequate comprehensive screening and treatment. Such a program will enhance the overall performance of our children.

DESIGN OF A VISION SCREENING PROGRAM

H.R. 4092 states that the vision screening offered shall be comprehensive. From my experience, I wish to draw your attention to the significance and implications involved in this commitment.

Several factors must be built into the design of a successful vision screening program. Among these are the establishment of suitable criteria for referral;

the incorporation of techniques which tend to minimize both over and under referrals; use of techniques which minimize child untestability; and last but not least, it must be affordable. The concept of "comprehensive" vision screening implies that the battery of tests administered should be capable of detecting the visual disorders found in school children. The traditional use of the wall chart, or Snellen visual acuity test, as the sole screening device is totally inconsistent with this concept. Research has shown that less than half of the children suffering from correctable visual disorders will be identified by use of a distance visual acuity test alone. In order for vision screening to detect the majority of childhood visual disorders, especially those disorders which are capable of interfering with the child's ability to achieve in school, it must include in addition to testing distance visual acuity (1) a test of binocular coordination. This refers to the child's ability to bring, and comfortably maintain, his eyes in proper alignment on a target he is attempting to look at. (2) A measure of refractive error. That is, determining whether the child is nearsighted, farsighted, or has an astigmatism. (3) An internal inspection of the tissues of the eye to determine if they are healthy and developing normally, and (4) Tests of visual perception including color perception.

Many of the conditions investigated by such a comprehensive battery of tests produce rather subtle symptoms not easily communicated by a child to his parents or teachers. These symptoms include eye strain, headaches, and rapid fatigue which if left uncorrected could easily cause the child to develop avoidance reactions when placed in a stressful situation or markedly reduce his attention span and comprehension.

Such an important and far reaching program as this will require the marshalling of adequate resources: manpower training and support, equipment, administrative procedures and follow-up services. All available information indicates that if these resources are developed, the success of the program is assured. With these needs in mind, H.R. #4092 represents a viable means of identifying school children suffering from visual disorders and represents a tool by which the educability and performance of school children can be significantly enhanced.

In conclusion I wish to offer my strong support for the passage of H.R. #4092. Past experience has proven that comprehensive vision screening has been of great benefit to school children by the early detection and referral of those children with visual disabilities. Vision screening therefore serves as an important entry point into the delivery of comprehensive vision care for our nation's youth. The passage of H.R. #4092 will be a significant step toward making this very valuable service available to all of the school children in this country.

Sincerely yours,

DAVID W. DAVIDSON, O.D.,
Director of Vision Services.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS,
New York, N.Y., October 9, 1975.

Hon. CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary, and Vocational Education, Committee on Education and Labor, House of Representatives, Rayburn House Office Building, Washington, D.C.

DEAR CONGRESSMAN PERKINS: The National Society for the Prevention of Blindness appreciates your invitation to submit a statement on screening and comments on HR 4092, the National Comprehensive Vision Care Act of 1975. We are now in the process of preparing such a statement.

The National Society has had over forty years experience with all facets of vision screening. We are recognized as one of the nation's leading authorities on planning, implementing and evaluating preschool and school vision screening programs.

As indicated by the attached Table of Contents for our statement, we will be providing your Subcommittee with considerable information which will be valuable for staff to have in further consideration of HR 4092. Much of this information is not available from any other source.

Because of the amount of material we will be submitting to you, I spoke on October 9, 1975 with Stan Sadlak about the possibility of submitting our statement subsequent to October 15, 1975 in order that we might make it as complete and as helpful as possible. He said this would be fine and that we should simply notify the Sub-Committee in writing regarding our intentions. The statement will be in your Subcommittee's possession by October 22, 1975. Unless informed otherwise, we trust this meets with your approval.

Thank you again for contacting us. We look forward to being of any possible assistance to you and the Subcommittee on this important and potentially far-reaching piece of legislation.

Sincerely,

DENNIS HIRSCHFELDER,
Program Assistant.

Enclosure.

TABLE OF CONTENTS

VIII. I. Introduction.
II. The National Society for the Prevention of Blindness.
III. Importance of early detection of vision problems.
IV. Value of screening for health conditions.
V. Vision screening for preschool and school age children.
VI. Prevalence of Vision Problem.
  a. Preschool
  b. School
VII. Existing vision screening programs for children.
  1. Community preschool programs
  2. Headstart
  3. Early and periodic screening, diagnosis and treatment programs (EPSDT)
  4. Home testing
  5. Pediatricians, family doctors, clinics, and health centers
  6. State requirements
    a. Preschool vision examinations
    b. School vision screening
    c. Identification of children with visual handicaps
VIII. Analysis of HR 4092, The National Vision Act of 1975 and Recommended Changes.
IX. Parent, child and professional education as component of any vision screening legislation.
X. Screening of children for learning disabilities, developmental disorders, physical and emotional problems.
XI. Recommendations for insuring effective implementation and compliance with legislation.
XII. Conclusion.
XIII. Bibliography.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS,
New York, N.Y., November 4, 1975.

Hon. CARL D. PERKINS,
Chairman, Subcommittee on Elementary, Secondary and Vocational Education, Committee on Education and Labor, House of Representatives, Rayburn Office Building, Washington, D.C.

DEAR CONGRESSMAN PERKINS: The opportunity to offer a position statement as requested on HR 4092, The National Comprehensive Vision Care Act of 1975, is greatly appreciated. I regret the delay in compiling the pertinent material which required far more time than originally estimated. I trust that this in-depth review will serve as a useful resource document for your Committee staff. A comprehensive selection of reference material, which supplements the statement, is being sent under separate cover.

Frankly, I am quite concerned about several aspects of the bill based on the Society's extensive experience with other eye health and safety legislation at both federal and state levels. It is of concern that no medical representation was invited to present oral testimony before your Committee. Without medical support and backing, especially from the viewpoint of the school health medical director, prospects for the bill's passage and implementation might be greatly diminished. Additionally, as our statement reveals, certain sections of the bill require evaluation to estimate costs of the proposed services.

Another section of concern is reference in the bill to vision screening for learning disorders especially in view of the difference of opinion among the professionals in the eye field and the lack of research on which to develop sound test procedures and standards. Considerable misunderstanding about this subject has been generated and distributed.

Since I have been closely involved in the Society's program of eye health including vision screening starting in the preschool years, since 1937, I believe sharing our knowledge and experience of the Society with your staff would be beneficial to all concerned.

I look forward to the opportunity of such a meeting. We will welcome any questions and comments to the proposed meeting.

Again our thanks for the chance to comment on this proposed legislation.

Sincerely,

VIRGINIA S. BOYCE, *Executive Director.*

POSITION STATEMENT ON H.R. 4092, THE NATIONAL COMPREHENSIVE VISION CARE ACT OF 1975

(By the National Society for the Prevention of Blindness, New York, N.Y.)

I. THE NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS

The National Society for the Prevention of Blindness, Inc., founded in 1908, is the nation's second oldest national voluntary health agency. It is the only national organization engaged exclusively in the prevention of blindness through a comprehensive program of community services, public and professional education, and research. The Society is supported entirely by contributions, memorial gifts, bequests and legacies, all of which are deductible for income tax purpose. The National Society is a member of the National Health Council and meets the standards of the National Information Bureau.

The National Society for the Prevention of Blindness is recognized as the nation's leading authority and resource agency on vision screening programs. Having researched and conducted vision screening for over 40 years, the Society has accumulated a wealth of knowledge, data and experience in the field. An extensive selection of materials has been developed on standards for vision screening; for instruction in screening techniques; providing guidelines to health agencies, schools and community groups on establishment of school and preschool vision screening programs; and for informing professionals and parents about the purpose and extent of the screening procedure.

All vision screening materials (standards, guidelines and procedures) are prepared under guidance of the Society's Committee on Eye Health of Children, a multidisciplinary committee of experts in the field. State affiliates of the National Society and associated agencies and organizations in non-affiliated states co-sponsor community vision screening programs; assist state and local health and education agencies with planning and implementation of their own vision screening programs; organize seminars and workshops on vision screening for nurses, educators, physicians and other professionals; and conduct extensive public education programs about children's vision problems.

II. VALUE OF SCREENING

"The basic purpose of screening for disease detection is to separate from a large group of apparently well persons those who have a high probability of having the disease under study, so that they may be given a diagnostic workup and, if diseased, brought to treatment.

"Tests used in screening must be relatively simple. Since many of the tests are done by persons who are not physicians, involved tests requiring extensive training in medicine are not appropriate for screening. For obvious reasons the tests must also be relatively inexpensive. In addition, screening tests should be fairly sensitive, specific, precise, and accurate. These attributes of screening tests are discussed in detail.

"Screening tests should be distinguished from diagnoste tests, which are usually more complex procedures used by physicians, along with the medical history, symptoms and signs, to establish or rule out a definitive diagnosis. However, many of the aspects of screening tests discussed here also apply to diagnostic tests." [1]

Screening never replaces a complete examination. However, manpower shortage and mal-distribution in the health field dictate that screening must be used to help detect those diseases where treatment can be successful. Screening programs for tuberculosis, glaucoma, cancer, diabetes and other conditions have been most effective in the United States. It must be realized that a screening will not identify all those individuals in a population group with a specific condition. Conversely, all those who fail a screening will not upon examination by a doctor be found to have the condition being screened for. However, a carefully conducted screening will identify the majority of those in a population group with a particular condition.

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[1] Principles and Procedures in the Evaluation of Screening, Public Health Service, U.S. Department of Health, Education and Welfare, 1961.

One of the major objections raised to health screening is that the screenee will be led to believe that he or she has had a much more complete test or examination than has actually been given. This admittedly is a drawback to any screening program. However, based on considerable experience, we know that the effect of misunderstanding about what kind of test has or has not been given can be minimized through proper education and interpretation.

"A screening test is a relatively simple, short and inexpensive test which can be administered reliably by nonprofessional testers to a large population in order to detect those members of that population who may require professional diagnosis and care."[2]

The advent of multiphasic screening programs during the past ten years, particularly in industry, attests to the practical value of screening tests for early disease detection. On hearings conducted in 1966 before the Subcommittee on Health of the Elderly to the Senate Special Committee on Aging, Dr. William Peeples, Commissioner of the Maryland State Department of Health stated what screening is and isn't.

"The fact that any given test, technique or procedure is available as an aid in the diagnosis of a particular disease does not automatically qualify this test for use as a screening tool or device. The primary purpose of screening is not diagnostic. It is directed at selected populations of apparently well individuals. It is a selective elimination to find those people who should undergo diagnostic procedures. A screening must be reasonably capable of selecting from a large population those persons most likely to have the disease for which the procedure is used. Such individuals, many of whom are unaware of any illness, are then referred to their physicians for definitive diagnosis. This enables the person with suspicious screening findings to obtain maximum benefits from early diagnosis and treatment. Studies have shown that screening tests have brought many people with asymptomatic but significant diseases, especially chronic diseases, to medical attention."[3]

Vision screening tests meet all requirements established for an effective screening test. They are simple to use, quick to administer, can be given by a trained nurse, volunteer or technician, and are inexpensive. Most importantly they are as a whole extremely valid and reliable in identifying children who, upon examiation, are confirmed to have vision problems.

III. EARLY DETECTION AND TREATMENT OF VISION PROBLEMS

The National Society for the Prevention of Blindness recommends that every newborn infant have a complete eye examination prior to leaving the hospital, again before entering school, and at periodic intervals during the school years.[4] However, available manpower, financial consideration and public misunderstanding make this ideal impractical at the present time.

Certain vision problems, among them amblyopia or "lazy eye," *must* be detected and treatment begun prior to the age of six. After the age of six treatment is difficult and often impossible. If vision problems are detected in the preschool years, they can usually be successfully treated with no permanent loss of vision. However, the older the child gets, the greater the difficulty of correcting these conditions.

The tragedy is that when initiation of treatment for vision problems is delayed past the preschool years, then sight lost to amblyopia can often *not* be restored. Early identification of children with certain vision problems becomes absolutely imperative to spare them unnecessary loss of vision.

Why do children's vision problems go unnoticed until it is too late? First of all pain and discomfort are often not associated with the vision problems so a child doesn't complain. Secondly, children believe that what they are seeing, even if it is blurry, is what all children see. Thirdly, the eyes of children with vision problems often look "normal" so the parent thinks nothing is wrong (an obvious exception is crossed-eyes). Parents, and unfortunately too many health and education professionals, do not understand that the child's vision should be screened prior to school entrance.

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[2] Sloane, Albert and Savitz Roberta, *Vision Screening.* International Ophthalmology Clinic, 3: 803, 809, (1963).

[3] A Report of the Subcommittee on Health of the Elderly to Special Committee on Aging, United States Senate, 1966.

[4] *Vision Screening of Children*, National Society for the Prevention of Blindness, 1972.

Vision screening in the preschool and school age years serves several important functions. Children with vision defects can be identified and referred for follow-up care. Secondly, children with vision handicaps can be identified and be made known to school personnel who can provide appropriate assistance. Thirdly, conducting a vision screening program provides an excellent opportunity to educate parents and children about the importance of early detection and treatment of vision problems.

"Impaired vision in children can seriously impede learning and contribute to development of emotional and behavior problems. If vision defects are discovered and treated early, however, serious impairment and its consequences can often be prevented." [5]

Thus vision screening in both the preschool and school years serves extremely important functions, the most important of which is preventing needless loss of sight. When the serious affects of undetected vision problems in the preschool and school age child are matched with the tremendous numbers of children with vision problems (Section IV) the gravity of the problem becomes evident. Shortages and maldistribution of eye doctors, problems inherent in the health care delivery system and parental ignorance all contribute to a relatively small number of children receiving a professional eye examination in the preschool and school age years. Thus extensive vision screening programs must be used to identify those children with vision problems . . . before it is too late.

IV. PREVALENCE OF VISION PROBLEMS

A. *Preschool children*

Results of vision screening programs and special studies provide data on which to base estimates of the prevalence of vision problems in children.

Data available from preschool vision screening programs held throughout the country indicate that, on the average, one in every 20 children in the 3 to 5 age group has a vision problem requiring observation, treatment, or correction. Based on this figure there were an estimated 573,000 preschool youngsters with such ocular problems in the United States in 1974.

The latest figures compiled by the National Society on preschool vision screening, for the 1973-1974 screening year, show that a total of 368,246 children age 3 to 6 were screened. (See attached summary report.) Of all the children screened 4.4% were referred for a complete eye examination and 78.5% of those who were examined, or 2.4% of those screened, were found to have a vision problem.

Reporting or follow-up on referrals for professional care is incomplete; only 68.6% of the referrals were reported as examined. The observed defect rate, therefore, underestimates the problem. If it is assumed that defects occur at the same rate among all referrals as among those reported as examined, then the rate of those screened having vision defects is found to be 3.8 per 100 screened. In addition, children already under care (wearing glasses and not referred) is reported at 0.6% of those screened.

The combination of these two figures—those with defects among referrals and those with defects already identified—provides a more probable estimate of the prevalence of vision defects among preschool children—4.4% which approximates the 5 in 100 (or 1 in 20) noted above.

This figure may underestimate the problem due to biases in the screened population. Screening programs may not attract many children currently under care for a vision defect, those with severe vision impairments, and high risk groups such as the economically deprived.

Among the children for whom specific abnormal conditions were reported, 68.9% had refractive errors, 14.5% had a muscle imbalance, 14.3% had amblyopia and 2.3% had a pathological condition.

The estimated incidence of these conditions per 1000 screened is as follows:

	Per 1000 screened
Refractive errors	35
Muscle imbalance	7
Amblyopia	7
Other	1

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[5] Lin-Fu, Jane S., *Vision Screening of Children*, U.S. Department of Health, Education, and Welfare, 1971.

A study[6] conducted by the Society in 1967 of legally blind infants and young children (under 7 years of age) revealed that 19 per 100,000 population in this age group are legally blind. A total of 4,800 young blind children was estimated for 1970. In 1974 this figure would be approximately 5,000. The findings of this study indicated that there was gross underreporting of blind children under the age of 4. The above rate is the result of an adjustment for this bias.

From an evaluation of the study results it was concluded that ". . . it is very difficult to obtain an accurate estimate of the prevalence of blindness among infants and young children and a description of the characteristics of this population since reporting of these children is so obviously incomplete. Unless the child is totally blind or has a very seriously visual impairment he is not apt to come to the attention of an agency providing services until he is of school age. This is unfortunate since much might be done to help many of these youngsters and their parents in the early preschool years." It was further noted that: "Greater case-finding efforts are also needed in order to identify these children *early*."

B. Schoolchildren

It is estimated that one out of every four school children has an eye condition requiring special care. In 1974 there were an estimated 12,621,200 children in this category.

This estimate is based on the results of a study conducted in St. Louis.[7] In this study 27% of the children who were screened in the first and sixth grades were found to have eye problems which required treatment or observation. Visual problems were found to be more prevalent among older children than among the younger ones—31% of the sixth grade students needed eye care while only 23% of the first grade students required such care.

These figures have been substantiated by the results of a number of school vision screening programs.

Partially seeing school children are estimated to number 1 in 500. They are defined as having a visual acuity greater than 20/200 but not greater than 20/70 in the better eye after correction. In 1974 there were an estimated 101,000 children in this category. A total of 19,840 legally blind school children were estimated for 1974. This figure is based on the most recent study of these children conducted by the National Society.[8] The results showed a prevalence rate of blindness for the 5-19 age group of 39.3 per 100,000 pupils enrolled or 1 in 2,500. The legally blind as defined have a visual acuity of 20/200 or less in the better eye with correction, or if better than 20/200 a limitation in the field of vision to 20° in the widest diameter.

Case finding through vision screening and/or professional examination is necessary for the identification of these children (both the partially seeing and the legally blind) early so that they may receive available special education and other services prior to and during their school years.

V. VISION SCREENING PROGRAMS FOR CHILDREN

A. Community preschool programs

Vision screening of preschool children by trained volunteers has been a prime community service program of the National Society for the Prevention of Blindness and its state affiliates since the early 1950's.

These programs have been utilized to demonstrate the need for early attention to eye problems in children and to stimulate the interest and concern of parents, eye specialists, pediatricians, educators, and community health agencies for meeting the need.

Over the years the program has continued to expand. More volunteers have been trained and more preschool children have been screened in an ever increasing number of projects.

Screening program results are compiled and analyzed annually by the National Society through standardized reporting by projects sponsored by the Society's 22 state affiliates. Data are also provided by similar programs carried out under the auspices of official or voluntary state and local agencies for the blind or prevention of blindness, state and local health departments, and service-oriented community organizations.

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[6] Hatfield, E. M.: Blindness in Infants and Young Children, Sight Sav Rev 42: 69–89 (1972).

[7] Crane, M. M., Foote, F. M., Scobee, R. G., Green, E. L.: Screening School Children for Visual Defects. Report of a study conducted in St. Louis, Missouri, 1948–49. U.S. Department of Health, Education and Welfare, Children's Bureau Publication 345. (1954)

[8] Hatfield, E. M.: Why Are They Blind? *Sight Sav. Rev.*, 45: 3–22 (1975).

In the 1973–1974 screening year these reports show that a total of 368,246 children ages 3–6 were screened. Of all children screened 4.4% were referred for a complete eye examination and 78.5% of those who were examined, or 2.4% of those screened, were verified as having an ocular condition requiring treatment, correction or observation.

An important aspect of the program is follow-up of referrals to insure that they receive the recommended professional examination and required care.

In projects reporting to the National Society at least 68.6% of those who are referred are examined.

Because of limitations in personnel and funds, even this large program sponsored primarily by the National Society is only skimming the surface. Of the estimated 7,626,441 children, ages 3 to 6, in the states with Society affiliates only 4.8% were screened.

B. Head Start program

Assistance of National Society affiliates was sought by this program either in vision screening the youngsters or in the training of headstart personnel to carry out this function.

At the outset this was a discouraging experience due to the lack of follow-up on those children who failed the screening. The program ended before this was accomplished or no mechanism was provided to carry out this aspect of the program. In addition, in some areas, funds were not available to provide for the necessary examination and treatment where there was a need. As a result of concerns expressed by the Society and its volunteers, provision was made for financial assistance where indicated and follow-up was built in to the program.

Data have been compiled separately for headstart vision screening programs conducted by Society affiliates and others reporting to the National Society. The referral and defect rates in these projects are, on the average, higher than those for other projects.

In the 1973–1974 screening year 22,573 children, ages 3 to 6, were screened and 1,413 or 6.3% referred. (See attached report.) Follow-up on referrals has shown considerable improvement with 80.1% of those referred examined. This has yielded a defect rate of 4.4% of those screened (3.8% newly detected cases or cases requiring additional care plus 0.6% already receiving adequate care.)

The program has shown a decline since headstart children were first screened in Society programs. There may be less emphasis on this program; reporting of separate results may also be a factor with headstart integrated into the entire program.

The greater than average yield of children with vision problems indicates the tremendous need for such a program for this economically deprived population group.

C. Early and periodic screening, diagnosis, and treatment program (EPSDT)

This program was authorized by the Amendments of 1967 to Title XIX of the Social Security Act for all children 0–21 years of age who are eligible for Medicaid. The effective date was July 1, 1969. Vision screening is a required component of the program.

Although the states were required to implement the program for those 0–6 years of age by February 1972 and for the entire eligible population by July 1, 1973, progress and the means for implementation has varied from state to state.

Recently 7 states were penalized as of July 1, 1974 for failing to make adequate progress in implementation of the program. An additional 6 are under review and further penalties could be forthcoming.

This program is designed to bring comprehensive health services to some 13 million underprivileged children. In the six years since the program was initiated less than 3 million children have received the mandated services according to program statistics. As of July 1974, a total of 1.5 million children had received medical examinations but almost none had received follow-up treatment.

Regulations on how to implement the program were published in November 1971 and guidelines were issued in June 1972. Screening guidelines were developed by the Academy of Pediatrics under contract to the Social and Rehabilitation Service, DHEW. The National Society provided consultation on the development of the vision screening component. Affiliate staffs have been involved to a limited extent in the development and implementation of state programs.

D. Home testing

Because of the difficulty in reaching the large number of preschool children with community screening programs, tests which can be used by parents at home have been developed.

Various tests and procedures have been utilized in the past decade with varying degrees of success. In Maine a state-wide program of vision screening of three year olds with home testing kits was conducted in 1964. The same year the Illinois Department of Public Health and the Illinois Chapter of the American Academy of Pediatrics did a pilot study of parent-administered vision screening of 3 and 4 year old children. Distribution of the kits developed for this purpose was conducted nationwide to all Fellows of the American Academy of Pediatrics. The Eau Claire, Wisconsin City-County Health Department carried out a do-it-yourself vision screening demonstration project in 1966–1968 for all 3½ year olds in the area.

A home vision screening demonstration project was also conducted in 1966–1967 by the Northern California affiliate of the National Society in the San Francisco Bay area.

Results of all of these projects demonstrated that home screening by parents was feasible and offered an excellent opportunity for parent education concerning the importance of early detection of vision problems in children.

Accordingly in 1972, the National Society with the aid of a grant from the Delta Gamma Foundation developed the Home Eye Test for Preschoolers based on the California experience.

The objectives of this Home Eye Test program were three-fold:

a. To identify children with possible vision problems and through follow-up to ascertain that they receive a complete eye examination.

b. To educate the public about the importance of early detection and treatment of vision problems.

c. To education health care professionals about the important role each can play in the early detection and treatment of vision problems.

The Home Eye Test kit contains simple instructions for the parent, an eye chart, and a card for reporting results to the Society. It is available without charge upon request.

Availability of the kit has been advertised in such magazines as Reader's Digest, Time, Saturday Review, Today's Health and Good Housekeeping, on the Today Show, in TV spots, in newspaper releases, and through Medical and Health Care Organizations. In all informational materials it is stressed that the HET in no way takes the place of a professional eye examination.

Support of the program after the first year was provided by the DeWitt Wallace Foundation, a Reader's Digest Public Service and continuation of the project has been assured indefinitely.

In the first year of the program (November 1972–October 1973) nearly one million kits were distributed. As of September 1, 1975, three and one-half million Tests have been sent out and the HET is going into its third printing. Although reporting has not been as complete as desired, sample surveys of recipients of the kits show that they are being used. Results also indicate that the findings (referral and defect rates) are comparable to those obtained in community screening programs.

E. State vision screening requirements

1. Preschool vision screening

According to data compiled by the National Society in 1974 there are apparently only two states, Michigan and California, that require, by law, a vision screening or eye examination for children during the preschool years. This is not a school pre-entrance examination. Although reports were not received from all states, there are no others, to our knowledge, with such a requirement. In two states, Massachusetts and New York, such legislation has been introduced but it has not passed.

In addition there are at least 6 states that require, either by law or regulation, an eye examination or vision screening prior to entrance into school *or* in kindergarten or first grade.

The specific requirements of the laws or regulations in the above states are as follows:

a. *Michigan* passed a law in 1968 which requires that each child entering school must have had a department of public health preschool vision screening test or an eye examination by an eye specialist during the preschool years after age 3 and prior to initial entrance.

Michigan was in a good position to implement this law since the health department already had a corps of trained vision screening technicians carrying out the school vision screening program.

b. *California* passed a law effective July 1, 1975 which requires that each child upon enrollment in the first grade, give evidence that he has received a vision examination within the prior 2 years.

c. *Georgia* enacted a law effective September 1, 1973 which requires that all children entering the first grade must have had an eye examination.

Vision screening by volunteers trained and certified by the Georgia affiliate of the National Society has been interpreted as meeting the requirements of this law.

d. *Illinois* enacted a law effective in August 1971 that requires physical examinations, including vision screening tests, of all pupils immediately prior to their entrance into kindergarten or the first grade, and immediately prior to or upon entrance into school if that pupil has not previously been examined in accordance with the above. "Immediately prior to" has been interpreted in printed material from the Department of Public Instruction as "within 6 months prior to."

e. *Virginia* required as of July 1, 1972 that each child have a "comprehensive physical examination" prior to entrance into first grade. Standards specified by the State Department of Health include vision screening requirements.

f. *Maine* has a law which requires vision screening of school children. The 1974 guidelines provided in accordance with this law specify that all preschool registrants should be screened before they are permanently registered.

g. *Massachusetts* law of 1972 relative to special education requires that all children eligible for kindergarten be vision screened at least 5 months prior to registration. Children ages 3 and 4, particularly those with a likelihood of a handicap, may also be screened at the discretion of the parent.

2. School vision screening

In the fall of 1967 the National Society conducted a survey to determine the status of vision screening in the schools in this country.

Another survey was undertaken in 1974 to secure current information pertaining to requirements for the examination of preschool, school, visually handicapped and mentally retarded children in each state. The results of the 1967 survey are given in the attached report.[9] Those for 1974 are incomplete because of inadequate response.

3. Identification of children with visual handicaps

There has been recent state legislative activity related to the early identification of children requiring special education programs. The following have come to the attention of the National Society:

a. *Massachusetts* regulations for implementation of the Comprehensive Special Education Law of 1972 prescribe a vision screening for all children eligible for kindergarten at least 5 months prior to registration. The screening of three and four year old children, especially those with a reasonable likelihood of having a substantial disability, if desired by the parent may be included.

b. *Wisconsin* in 1973 passed a law which requires each school district to screen each child when he first enrolls in a public school in order to determine if the child has exceptional educational needs. This includes those with a visual disability.

c. *Maine* in 1974 promulgated regulations to implement the provisions of the law pertaining to the education of exceptional children. These require the identification of visually impaired school children and preschool children who will be age 5 by October 15. Procedures for identifying these children are not specified.

An obvious question that arises relates to the fact that since most every state has a vision screening regulation, why is federal legislation now being considered? First of all the proposed regulation will hopefuly include preschool as well as school age children. Secondly, most state departments of heatlh and education lack funds to employ sufficient staff on the state and local level to carry out the vision screening, and, most importantly, to insure that referrals seek and receive follow-up care. Funds are currently not available to provide care for children needing it, but not covered under medicaid or other governmental program.

The National Society and its affiliates are inundated with pleas for help from school health officials and parents for children requiring vision care but being unable to obtain it because of limited financial resources.

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[9] Hatfield, E. M. and Nudell, R. J.: State School Vision Screening Programs, *Sight Sav. Rev.* 38: 141-147 (1968).

Cutbacks in school budgets have decimated school health programs which have responsibility for conducting school vision screening programs. In New York City for instance, the last two years have seen a drastic cut-back in school nurse personnel and in a large innovative health aid program. Thus it is impossible for New York City to meet the vision screening requirements.

To our knowledge, not one city health or education agency in this country has a staff person whose sole responsibility is vision screening. Yet such a person often exists for hearing screening and other aspects of school health programs.

VI. ANALYSIS OF H.R. 4092, THE NATIONAL COMPREHENSIVE VISION CARE ACT OF 1975

The National Society for the Prevention of Blindness strongly supports the intent of H.R. 4092. The bill's potential impact is significant. However, based on considerable experience with national and state legislation involving vision screening, we request that serious consideration be given to modifying wording of the bill as outlined below.

1. Page 1, Line 4—"Vision Care of 1975" is too general for this particular piece of legislation. It should be limited to goal of legislation.
2. Page 1, Line 6-9—Preschools should also be added since detection of vision problems in preschool age children is actually more important than for the school age.
3. Page 2, Line 9—Add "preschool and" before the word "school"
4. Page 2, Lines 10-11—What is meant by "free vision screening and necessary follow-up services?" Will all follow-up care be given to all who need it regardless of economic status? Will children going directly to a doctor for an initial eye exam be paid for?
5. Page 2, Line 17—Requiring an "annual" vision test is unnecessary. The words "prior to school entrance and periodically thereafter" should be used instead.
6. Page 2, Line 20-22 (see #3)
7. Page 2, Line 24—A number (3) should be added to what the annual grants shall be used for as follows: "(3) educating parents about proper eye care for their children."
8. Page 3, Line 1—Priority should be given to the preschool child thus the words "preschool and kindergarten through" should precede "First six grades."
9. Page 3, Line 8—The key to the success of this legislation rests with careful preplanning of its implementation, with proper development of training materials, audio-visual aids, and with acceptance by all health and education professionals involved with any stage of implementation. We thus recommend strongly that the Secretary's Advisory Panel be expanded to include a pediatrician, school health physician, school nurse, health educator, school administrator, bio-statistician, PTA representative and representatives from professional organizations and voluntary agencies (i.e. National Society for the Prevention of Blindness) with a particular expertise in the field.

VII. SCREENING FOR LEARNING DISABILITY

"All children who have reading difficulties or other learning problems (among them dyslexia), who experience scholastic failure, who are suspected of being mentally retarded, or who have medical problems such as cerebral palsy or diabetes should have a thorough, professional eye examination included in their physical, mental and emotional evaluations."[10]

The above statement constitutes the National Society's recommendation concerning the vision of children with learning problems. We strongly support the statement, "The Eye and Learning Disabilities" approved by The Executive Committees and Councils of the American Academy of Pediatrics, the American Academy of Opthalmology and Otolaryngology, and the American Association of Ophthalmology. The full document is contained in the reference materials accompanying this position statement.

VIII. RECOMMENDATIONS FOR INSURING EFFECTIVE IMPLEMENTATION AND COMPLIANCE WITH LEGISLATION

We have encountered numerous situations with vision care legislation where an excellent law was enacted, but the law's requirements were not implemented. The result of non-compliance is that those individuals whose sight may have been saved through one or another program were not reached.

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[10] *Vision Screening of Children*, National Society for the Prevention of Blindness, 1972.

Thus we urge that careful consideration be given to implementation in finalizing wording of H.R. 4092 and in securing its passage. Specifically the following recommendations are made:

1. The Secretary's Advisory Panel must be expanded as referred to in item 9 Section VII to include representatives of professional groups, agencies and organizations to be involved with implementation and including these people from the beginning and at the top level of decision making to assure their cooperation in securing effective implementation. The following professions and agencies should be on the Secretary's Panel—school nursing, school administration, board of education, educators, public health agency, ophthalmology, optometry, and the PTA.

2. Sufficient lead time for compliance with the law's requirements must be provided for states to effectively plan toward implementing their vision screening programs.

3. Sufficient funds *must* be budgeted to provide for adequate personnel at federal, state and local level for carrying out the vision screening programs. We recommend that each state and each HEW regional office have at least one full-time staff person who will devote their time to the school and preschool vision screening programs. Funds must also be available to develop proper training materials (for trainers) to use in teaching vision screening techniques, for screeners to use in conducting screening programs, for parent education, and most importantly, for paying for follow-up care.

4. Follow-up on children who fail the screening to insure that they receive a complete eye examination constitutes the most important part of any vision screening. Yet this is usually the weakest part of most programs. Thus, personnel and funds must be assured for this vitally important activity.

5. Teacher, parent and child education should accompany each community vision screening. An excellent opportunity is created by the screening process to emphasize early detection of vision problems, proper eye safety habits, and how the eye works. Thus a comprehensive teacher, parent and child education program should be designed by each state receiving funds for vision screening programs.

IX. COST OF LEGISLATION

We have been attempting in recent weeks to accurately estimate costs of implementing HR 4092. This has been difficult to achieve for several reasons.

1. Cost of screening will depend on tests used; on who does the testing (school nurses, technicians, volunteers); on how often testing is performed (frequency of testing has a direct bearing on number of testing personnel required); referrals requiring follow-up care; on which students (all, some, or just medically indigent) will be eligible for financial assistance for follow-up care; and what follow-up services will be paid for. None of the above have been determined.

2. What portion if any of costs for vision screening will be assumed by state? Currently, state and local health and education agencies are spending funds on vision screening.

3. What will be size of administrative staff required to implement legislation at national, regional, state and local level? The National Society strongly recommends a large enough staff in the Department of Health, Education, and Welfare to assist states in setting-up the program, to develop screening and training guidelines and materials, and to monitor states' implementation of the mandated program. We recommend that sufficient funds be provided to finance one person in each of HEW's regional offices whose exclusive responsibility is assisting states with implementation of the legislation.

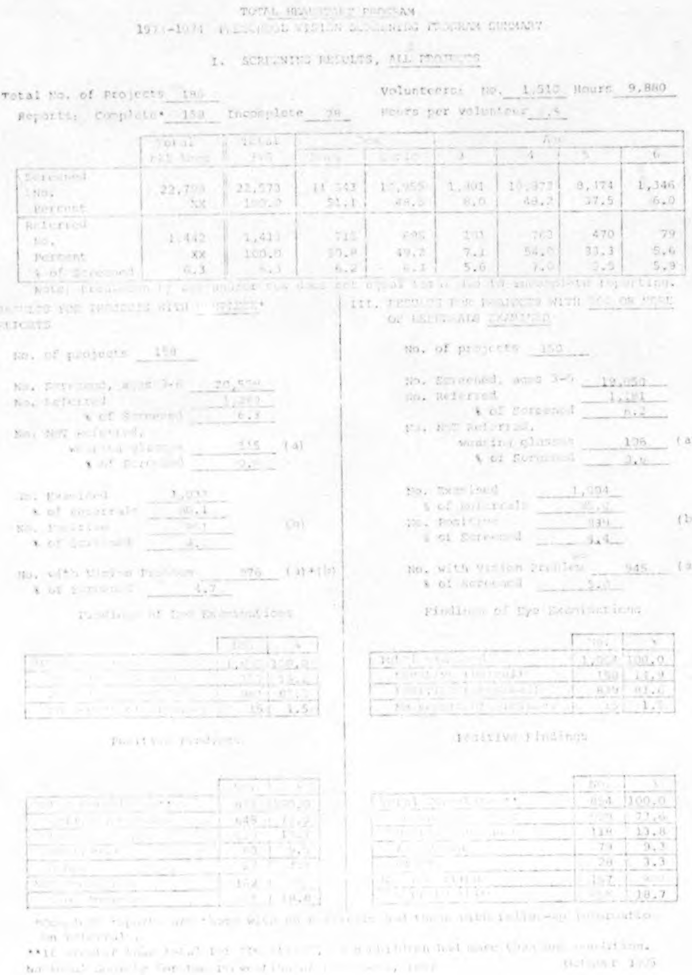
	Estimated number (1974)	Cost per child	Total cost
Screening:			
5 yr old (not in school)	1, 283, 000	$1. 00	$1, 283, 000
Kindergarten	2, 733, 500	. 50	
Grade 1	3, 777, 200	. 50	
Grade 3	3, 777, 200	. 50	
Grade 5	4, 025, 700	. 50	11, 232, 200
Grade 8	4, 075, 400	. 50	
Grade 10	4, 075, 400	. 50	
Total screened	22, 464, 400		12, 515, 200
Administration	23, 747, 400	. 15	3, 562, 110
Total			16, 077, 310

A rough estimate of the cost of a national vision screening program can be based on the cost of implementing vision screening legislation in Michigan.

This state and Illinois, have the two most effective statewide vision screening programs in the United States. The Michigan experience has shown that it costs about $1.00 to screen a preschool child and 50–60 cents to screen a school child. In addition administrative costs run 15–20 cents per child. It must be kept in mind that these costs are based on the use of paid technicians who do the screening and no follow-up care expenditures.

If it is assumed that each year all 5 year old children (including those in kindergarten) and those in the first, second, fifth, eighth and tenth **grades (as** recommended by the National Society) are screened a minimal program cost estimate just for screening of $16,077,310 can be postulated as follows:

If *all* 5 year olds plus *all* school children are screened annually (50,983,000 children) the cost would increase to $33,780,450.



TOTAL HEADSTART PROGRAM
197[illegible]-1974 PRESCHOOL VISION SCREENING PROGRAM SUMMARY

I. SCREENING RESULTS, ALL PROJECTS

Total No. of Projects 186
Reports: Complete* 158 Incomplete 28
Volunteers: No. 1,510 Hours 9,880
Hours per volunteer 6.5

	Total All Ages	Total 3-6	Sex: Boys	Sex: Girls	Age: 3	Age: 4	Age: 5	Age: 6
Screened No.	22,793	22,573	11,543	10,955	1,801	10,873	8,474	1,346
Percent	XX	100.0	51.1	48.9	8.0	48.2	37.5	6.0
Referred No.	1,442	1,411	716	695	101	763	470	79
Percent	XX	100.0	50.8	49.2	7.1	54.0	33.3	5.6
% of Screened	6.3	6.3	6.2	6.1	5.6	7.0	5.5	5.9

Note: Breakdown by sex and/or age does not equal total due to incomplete reporting.

II. RESULTS FOR PROJECTS WITH COMPLETE* REPORTS

No. of projects 158

No. Screened, ages 3-6 20,5[illegible]
No. Referred 1,2[illegible]
% of Screened 6.3
No. NOT referred, wearing glasses 115 (a)
% of Screened [illegible]

No. Examined 1,033
% of referrals [illegible]
No. Positive 861 (b)
% of Screened [illegible]

No. with Vision Problem 976 (a)+(b)
% of Screened 4.7

Findings of Eye Examinations

	No.	%
[illegible]	1,0[illegible]	100.0
[illegible]	[illegible]	[illegible]
[illegible]	861	[illegible]
[illegible]	15	1.5

Positive Findings

	No.	%
[illegible]**	871	100.0
[illegible]	645	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	83	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	152	[illegible]
[illegible]	[illegible]	18.8

III. RESULTS FOR PROJECTS WITH 75% OR MORE OF REFERRALS EXAMINED

No. of projects 150

No. Screened, ages 3-6 19,050
No. Referred 1,181
% of Screened 6.2
No. NOT Referred, wearing glasses 106 (a)
% of Screened [illegible]

No. Examined 1,024
% of Referrals [illegible]
No. Positive 839 (b)
% of Screened 4.4

No. with Vision Problem 945 (a)+(b)
% of Screened 5.0

Findings of Eye Examinations

	No.	%
Total examined	1,024	100.0
Negative (normal)	150	14.9
Positive (abnormal)	839	81.6
No report of findings	15	1.5

Positive Findings

	No.	%
Total conditions**	854	100.0
[illegible]	[illegible]	[illegible]
[illegible]	118	13.8
[illegible]	79	9.3
[illegible]	28	3.3
[illegible]	157	[illegible]
[illegible]	[illegible]	18.7

*Complete reports are those with no [illegible] and those with follow-up information on referrals.
**If greater than total for the [illegible], some children had more than one condition.
National Society for the Prevention of Blindness, [illegible] October 1975

1973-74 PRESCHOOL VISION SCREENING PROGRAM

N.S.P.B. PROJECTS (22 STATES)

	Projects			Complete projects—ages 3 to 6							Projects with 50 percent or more examined—ages 3 to 6						
					Referred		Examined		Positive [2]			Referred		Examined		Positive [2]	
State	Total	Complete [1]	50 percent or more examined	Screened	Number	Percent of screened	Number	Percent of referred	Number	Percent of screened	Screened	Number	Percent of screened	Number	Percent of referred	Number	Percent of screened
Northern California	51	48	44	11,981	394	3.3	264	67.0	196	1.6	9,868	332	3.4	247	74.4	183	1.9
Southern California	17	17	13	8,920	396	4.4	242	61.1	183	2.1	7,186	347	4.8	220	63.4	167	2.3
Colorado	42	40	36	9,762	172	1.8	133	77.3	106	1.1	9,172	151	1.6	126	83.4	103	1.1
Connecticut	103	91	90	14,392	652	4.5	516	79.1	385	2.7	14,304	649	4.5	515	79.4	384	2.7
Florida	38	33	25	21,290	763	3.6	439	57.5	323	1.5	17,064	608	3.6	375	61.7	274	1.6
Georgia	25	13	8	5,124	127	2.5	55	43.3	49	1.0	3,043	44	1.4	37	84.1	32	1.1
Indiana	32	28	25	16,091	571	3.5	357	62.5	285	1.8	15,686	548	3.5	350	63.9	278	1.8
Iowa	109	87	80	15,097	655	4.3	464	70.8	370	2.5	14,120	602	4.3	450	74.8	358	2.5
Kentucky	25	24	23	14,711	716	4.9	505	70.5	428	2.9	14,316	652	4.6	484	74.2	409	2.9
Massachusetts	47	39	35	8,393	399	4.8	319	79.9	250	3.0	7,916	368	4.6	310	84.2	247	3.1
Mississippi	100	84	80	14,393	464	3.2	354	76.3	263	1.8	13,463	409	3.0	343	83.9	256	1.9
Nebraska	12	11	10	1,707	42	2.5	29	69.0	23	1.3	1,556	35	2.2	26	74.3	21	1.3
North Carolina	22	17	13	6,462	182	2.8	119	65.4	89	1.4	5,728	133	2.3	106	79.7	77	1.3
Ohio	69	65	59	25,682	1,457	5.7	1,216	83.5	1,000	3.9	24,628	1,422	5.8	1,203	84.6	988	4.0
Oklahoma	8	7	6	579	17	2.9	7	41.2	3	.5	477	10	2.1	6	60.0	2	.4
Puerto Rico [3]	0	0	0														
Rhode Island	29	28	27	4,541	208	4.6	147	70.7	110	2.4	4,453	203	4.6	145	71.4	109	2.4
Texas	57	50	40	28,978	999	3.4	608	60.9	519	1.8	21,606	775	3.6	531	68.5	451	2.1
Utah	2	2	1	3,185	67	2.1	34	50.7	33	1.0	253	8	3.2	7	87.5	7	2.8
Virginia [3]	0	0	0														
Washington	32	25	21	12,776	452	3.5	297	65.7	248	1.9	10,595	365	3.4	268	73.4	221	2.1
Wisconsin	41	35	31	11,122	404	3.6	299	74.0	233	2.1	10,016	363	3.6	282	77.7	217	2.2
Total	861	744	667	235,186	9,137	3.9	6,404	70.1	5,096	2.2	205,450	8,024	3.9	6,031	75.2	4,784	2.3

INDEPENDENT PROJECTS (12 STATES)

Delaware	1	1	0	1,398	20	1.4	6	30.0	6	0.4							
District of Columbia	1	1	1	13,731	840	6.1	569	67.7	449	3.3	13,731	840	6.1	569	67.7	449	3.3
Idaho (Twin Falls)	2	2	1	2,452	95	3.9	57	60.0	43	1.8	549	42	7.7	35	83.3	25	4.5
Maine (Rumford)	1	1	1	166	14	8.4	13	92.9	11	6.6	166	14	8.4	13	92.9	11	6.6
Missouri	4	4	2	3,273	104	3.2	47	45.2	40	1.2	594	9	1.5	7	77.8	7	1.2
Montana (Billings)	1	1	0	2,743	80	2.9	18	22.5	16	.6							
Nevada	2	2	2	978	101	10.3	76	75.2	50	5.1	978	101	10.3	76	75.2	50	5.1
New Jersey	172	170	164	23,062	1,355	5.9	1,088	80.3	908	3.9	22,395	1,305	5.8	1,072	82.1	894	4.0
New Mexico	10	8	8	2,317	8	.3	6	75.0	5	.2	2,317	8	.3	6	75.0	5	.2
New York	26	19	15	35,848	2,380	6.6	1,394	58.6	990	2.8	31,932	2,014	6.3	1,310	65.0	934	2.9
Pennsylvania	2	2	2	10,285	429	4.2	309	72.0	221	2.1	10,285	429	4.2	309	72.0	221	2.1
South Carolina	2	2	2	1,346	8	.6	4	50.0	3	.2	1,346	8	.6	4	50.0	3	.2
Total	224	213	198	97,599	5,434	5.6	3,587	66.0	2,742	2.8	84,293	4,770	5.7	3,401	71.3	2,599	3.1

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[1] Complete reports are those with no referrals and those with follow-up information on referrals.

[2] Number of children who were examined and found to have positive (abnormal) conditions.

[3] No reports received for this year.

TOTAL: NSPB AND INDEPENDENT STATES, PRESCHOOL VISION SCREENING PROGRAM—COMPARATIVE FIGURES

	1972-73[1]		1973-74	
I. All projects:				
Number reporting	1,275		1,085	
Number of volunteers	31,188		28,925	
	All ages	3 to 6	All ages	3 to 6
Number screened	428,804	387,333	384,128	368,246
Number referred	20,178	17,210	18,522	16,180
Percent referred	4.7	4.5	4.8	4.4

[1] As reported on 1973-74 State summary of preschool vision screening.

	1972-73[1]	1973-74
II. Projects with complete reports:[2]		
Number of projects	1,112	957
Number screened, ages 3 to 6	350,231	332,785
Number referred, ages 3 to 6	16,075	14,571
Percent referred	4.6	4.4
Number not referred, wearing glasses (a)	2,323	2,547
Number examined	10,695	9,991
Percent of referrals examined	66.5	68.6
Number of positive findings (b)	8,423	7,838
Percent of examined	78.8	78.5
Percent of screened	2.4	2.4
Number with a vision problem (a)+(b)	10,746	10,385
Percent of screened	3.1	3.1
III. Projects with 50 percent or more of the referrals examined:		
Number of projects	987	865
Number screened, ages 3 to 6	287,090	289,743
Number referred, ages 3 to 6	13,206	12,794
Percent referred	4.6	4.4
Number not referred, wearing glasses (a)	1,868	2,258
Number examined	9,866	9,432
Percent of referrals examined	74.7	73.7
Number of positive findings (b)	7,749	7,383
Percent of examined	78.5	78.3
Percent of screened	2.7	2.5
Number with a vision problem (a)+(b)	9,617	9,641
Percent of screened	3.3	3.3

[1] As reported on 1973-74 State summary of preschool vision screening.
[2] Complete reports, those with no referrals and those with follow-up information on referrals.

TOTAL [illegible] STATES
[illegible] PRESCHOOL VISION SCREENING PROGRAM SUMMARY

I. SCREENING [illegible], ALL PROJECTS

Total No. of Projects 1,[illegible]   Volunteers: No. 28,925 Hours 184,919
Reports: Complete* [illegible] Incomplete 118   Hours per volunteer [illegible]

	Total All Ages	Total 3-6	[illegible]	[illegible]	3	4	5	6
Screened								
No.	[illegible]4,128	[illegible]	[illegible]	[illegible]	40,635	[illegible],124	143,199	37,329
Percent	xx	100.0	[illegible]	[illegible]	11.0	[illegible]	39.9	10.1
Referred								
No.	18,[illegible]	16,180	[illegible]	7,648	[illegible],410	,933	5,840	1,575
Percent	xx	100.0	51.[illegible]	47.[illegible]	8.7	42.8	36.1	9.7
% of Screened	4.8	4.4	[illegible]	4.[illegible]	3.5	4.[illegible]	4.1	4.2

Note: [illegible] total due to incomplete reporting.

II. RESULTS FOR PROJECTS WITH COMPLETE* REPORTS

No. of projects [illegible]

No. Screened, ages 3-6 332,285
No. Referred 14,571
% of Screened 4.4
No. NOT Referred,
wearing glasses 2,147 (a)
% of Screened 0.8

No. Examined 9,[illegible]
% of Referrals 68.6
No. Positive [illegible] (b)
% of Screened [illegible]

No. with Vision Problem 10,385 (a)+(b)
% of Screened 3.1

Findings of Eye Examinations

	No.	%
Total Examined	9,[illegible]	[illegible]
Negative (normal)	2,01[illegible]	[illegible]
POSITIVE (abnormal)	[illegible],838	[illegible]
No report of findings	134	1.3

Positive Findings

	No.	%
Total Conditions**	[illegible]	100.0
Refractive Error	[illegible]	68.[illegible]
Muscle Imbalance	1,213	14.5
Amblyopia	[illegible],195	14.[illegible]
Other	189	[illegible]
Not Specified	1,471	xx
% of Positive	xx	18.9

III. RESULTS FOR PROJECTS WITH [illegible] OF REFERRALS EXAMINED

No. of projects 665

No. Screened, ages 3-6 289,743
No. Referred 12,794
% of Screened 4.4
No. NOT Referred,
wearing glasses 2,258 (a)
% of Screened 0.8

No. Examined 9,432
% of Referrals 73.7
No. Positive 7,383 (b)
% of Screened 2.5

No. with Vision Problem 9,641 (a)+(b)
% of Screened 3.3

Findings of Eye Examinations

	No.	%
Total Examined	9,432	100.0
Negative (normal)	1,925	20.4
POSITIVE (abnormal)	7,383	78.3
No report of findings	124	1.3

Positive Findings

	No.	%
Total Conditions**	7,841	100.0
Refractive Error	5,391	68.8
Muscle Imbalance	1,153	14.7
Amblyopia	1,122	14.3
Other	175	2.2
Not Specified	1,401	xxx
% of Positive	xxx	19.0

*Complete reports are those with no referrals and those with follow-up information on referrals.

**If greater than total for "positive", some children had more than one condition.

National Society for the Prevention of Blindness, Inc.   October 1975

1973-74 PRESCHOOL VISION SCREENING PROGRAM—TOTAL HEADSTART PROGRAM

State	Projects			Complete projects—ages 3 to 6							Projects with 50 percent or more examined—ages 3 to 6						
					Referred		Examined		Positive²			Referred		Examined		Positive²	
	Total	Complete¹	50 percent or more examined	Screened	Number	Percent of screened	Number	Percent of referred	Number	Percent of screened	Screened	Number	Percent of screened	Number	Percent of referred	Number	Percent screened
NSPB PROJECTS																	
Northern California	9	9	9	618	24	3.9	21	87.5	17	2.8	618	24	3.9	21	87.5	17	2.8
Southern California	1	1	1	96	1	1.0	1	100.0	1	1.0	96	1	1.0	1	100.0	1	1.0
Colorado	2	1	1	39	3	7.7	3	100.0	2	5.1	39	3	7.7	3	100.0	2	5.1
Connecticut	2	2	2	73	2	2.7	1	50.0	1	1.4	73	2	2.7	1	50.0	1	1.4
Florida	4	4	3	1,288	46	3.6	35	76.1	28	2.2	913	31	3.4	31	100.0	27	3.0
Indiana	4	3	3	812	37	4.6	21	56.8	20	2.5	812	37	4.6	21	56.8	20	2.5
Iowa	14	10	9	446	32	7.2	23	71.9	20	4.5	422	27	6.4	22	81.5	19	4.5
Kentucky	13	12	12	1,870	106	5.7	89	84.0	71	3.8	1,870	106	5.7	89	84.0	71	3.8
Massachusetts	4	4	4	595	40	6.7	33	82.5	28	4.7	595	40	6.7	33	82.5	28	4.7
Mississippi	71	59	57	7,996	225	2.8	182	80.9	150	1.9	7,675	200	2.6	178	89.0	146	1.9
Nebraska	1	1	1	41	4	9.8	2	50.0	1	2.4	41	4	9.8	2	50.0	1	2.4
North Carolina	1	0	0														
Ohio	7	7	7	1,497	342	22.8	325	95.0	270	18.0	1,497	342	22.8	325	95.0	270	18.0
Oklahoma	1	1	1	31	6	19.4	4	66.7			31	6	19.4	4	66.7		
Rhode Island	4	3	2	555	35	6.3	20	57.1	13	2.3	467	30	6.4	18	60.0	12	2.6
Texas	13	10	9	1,480	95	6.4	68	71.6	55	3.7	1,305	84	6.4	65	77.4	53	4.1
Utah	1	1	1	253	8	3.2	7	87.5	7	2.8	253	8	3.2	7	87.5	7	2.8
Washington	8	6	5	904	70	7.7	38	54.3	32	3.5	426	32	7.5	27	84.4	22	5.2
Wisconsin	2	2	2	117	5	4.3	4	80.0	4	3.4	117	5	4.3	4	80.0	4	3.4
INDEPENDENT																	
Missouri	1	0	0														
Nevada	1	1	1	69	9	13.0	5	55.6	4	5.8	69	9	13.0	5	55.6	4	5.8
New Jersey	17	17	17	1,404	167	11.9	134	80.2	125	8.9	1,404	167	11.9	134	80.2	125	8.9
New York	3	3	2	245	32	13.1	17	53.1	12	4.9	197	23	11.7	13	56.5	9	4.6
South Carolina	1	1	1	130	0												
Total	186	158	150	20,559	1,289	6.3	1,033	80.5	861	4.2	19,050	1,181	6.2	1,004	85.0	839	4.4

[1] Complete reports are those with no referrals and those with follow-up information on referrals.
[2] Number of children who were examined and found to have positive (abnormal) conditions.

TOTAL: HEADSTART PROGRAM, PRESCHOOL VISION SCREENING PROGRAM—COMPARATIVE FIGURES

	1972-73[1]		1973-74	
I. All projects:				
Number reporting	184		186	
Number of volunteers	1,855		1,510	
	All ages	3 to 6	All ages	3 to 6
Number screened	22,067	21,955	22,799	22,573
Number referred	1,258	1,243	1,442	1,413
Percent referred	5.7	5.7	6.3	6.3

[1] As reported on 1973-74 State summary of preschool vision screening.

	1972-73[1]	1973-74
II. Projects with complete reports:[2]		
Number of projects	151	158
Number screened, ages 3 to 6	18,775	20,559
Number referred, ages 3 to 6	1,116	1,289
Percent referred	5.9	6.3
Number not referred, wearing glasses (a)	125	115
Number examined	922	1,033
Percent of referrals examined	82.6	80.1
Number of positive findings (b)	719	861
Percent of examined	78.0	83.3
Percent of screened	3.8	4.2
Number with a vision problem (a)+(b)	844	976
Percent of screened	4.5	4.7
III. Projects with 50 percent or more of the referrals examined:		
Number of projects	139	150
Number screened, ages 3 to 6	17,321	19,050
Number referred, ages 3 to 6	1,018	1,181
Percent referred	5.9	6.2
Number not referred, wearing glasses (a)	119	106
Number examined	896	1,004
Percent of referrals examined	88.0	85.0
Number of positive findings (b)	698	839
Percent of examined	77.9	83.6
Percent of screened	4.0	4.4
Number with a vision problem (a)+(b)	817	945
Percent of screened	4.7	5.0

[1] As reported on 1973-74 state summary of preschool vision screening.
[2] Complete reports, those with no referrals and those with followup information on referrals.

[From the Sight-Saving Review, Fall 1968]

STATE SCHOOL VISION SCREENING PROGRAMS

(By Elizabeth Macfarlane Hatfield, M.P.H., and Rochelle J. Nudell[1])

(Results of a survey conducted by NSPB indicate that all states in the United States have some type of school vision screening program, with coverage of school districts and students varying throughout the country.)

In the fall of 1967 the National Society for the Prevention of Blindness conducted a survey of school vision screening programs throughout the country. The purpose of the survey was to secure current and comprehensive information on legislation, standards, procedures, and personnel pertinent to the conduct of these programs.

A questionnaire was sent to the Directors of the State Departments of both Health and Education in the 50 states, the District of Columbia, New York City, the Commonwealth of Puerto Rico, the territories of the Canal Zone, Guam, the Marianas, Samoa, and the Virgin Islands. In addition, a copy of the law, procedural manuals, report forms, and the latest report of program results were requested where available.

The agencies were most cooperative in returning the questionnaires and in supplying additional information concerning their programs. Completed questionnaires were received from all states, the District of Columbia, New York City, and all except two territories. *These 58 localities will all be referred to hereafter as "states."*

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[1] **Mrs. Hatfield is consultant in statistics and Miss Nudell is assistant statistician, National Society for the Prevention of Blindness.**

Generally a single report was received from the state agency responsible for the program, or a cooperative report was received where the program is a joint responsibility of the two agencies. In only a few instances was a separate report received from each of the two state departments surveyed in a state.

Results of the survey indicate that all states have some type of vision screening program. However, the coverage of school districts varies and is not as complete as desirable.

Twenty-five states (45 percent) reported that screening programs are conducted in all school districts, and another 21 states (38 percent) reported screening in over three fourths of, but not in all, school districts. Five states indicated that less than three fourths of the school districts have screening programs. The remaining 5 states did not report the proportion of the school districts covered by the program.

Vision screening is required by law in only 20, or 36 percent, of the states. In 28 of the 36 states that do not have specific laws, the program is authorized at the state level by an administrative regulation of the health department, a general health code, or a school health code. In the remaining states the program is left to the discretion of the local school and/or health department.

In only one third of all the states does the screening law or regulation apply to nonpublic schools.

TABLE 1.—AGENCY RESPONSIBLE FOR OVERALL SUPERVISION OF SCHOOL VISION SCREENING PROGRAM BY STATES WITH AND WITHOUT A SCREENING LAW

Responsible agency	Law		No law		Total	
	Number	Percent	Number	Percent	Number	Percent
State level	17	85.0	28	77.8	45	80.4
Health department	4	20.0	14	38.9	18	32.1
Department of Education	4	20.0	5	13.9	9	16.2
Both agencies	9	45.0	9	25.0	18	32.1
Local level	3	15.0	8	22.2	11	19.6
Health Department	0	0	4	11.1	4	7.1
School	3	15.0	3	8.3	6	10.7
Both agencies	0	0	1	2.8	1	1.8
Total States	20	100.0	36	100.0	56	100.0

RESPONSIBILITY FOR PROGRAMS

The State Health Department is responsible for establishing standards for and/or general supervision of the screening program in 18 states. In 9 states, the State Department of Education has this responsibility, and in 18 states the responsibility is shared by the two agencies.

In the remaining 11 states responsibility for the program is at the local level. In 6 of these the responsibility is with the individual school system, in 4 it is with health department, and in 1 it is jointly administered by the schools and the health department (see Table 1).

Actual administration and supervision of the screening program are the responsibility of the individual local school, school district, and/or health department in 16 states. There is varying involvement by a state agency in the other 40 states. In 8 of these 40 states, administration of the program is the exclusive responsibility of one or both of the state agencies. In 32 states responsibility is at both the local and the state levels. The pattern of cooperation between state and local agenices varies considerably from one state to another.

It appears from the responses on the questionnaires that in some instances specific information is lacking at the state level about the exact screening programs and procedures employed locally. However, many of these states are working toward more standardized programs through establishing approved statewide screening standards, extending testing procedures, and improving follow-up.

Within some states there is substantial variation in the frequency of screening, the grades screened, the tests administered, and the criteria for referral. In addition, follow-up on the children who are referred varies from one district to another. The variation may be due to the local autonomy of each program, but the lack of adequate personnel needed to perform the various functions seems to be somewhat more significantly related to local differences in a state program.

CHARACTERISTICS OF 28 SCREENING PROGRAMS

Since the quality of reporting on school vision screening programs varied considerably from state to state, only 28 of the states were included in a detailed analysis of the characteristics of the actual screening programs. Reports from these states indicated more complete coverage and better reporting of results. In general these states appeared to have better programs.

For this group of states it was found that the proportion having a law requiring school vision screening did not differ from that for all states. Apparently, having a law did not in any way influence the quality or completeness of the questionnaires received. It is believed, therefore, that the following analysis of procedures and practices based only on this group is not biased either in favor of or against states which do not have a vision screening law.

Physicians, optometrists, nurses, technicians, teachers, and parents or volunteers were all reported to administer vision screening tests in varying degrees. Most of the screening, however, is done by nurses, teachers, and parents or volunteers. Nurses were reported to screen more than half of the children in 39 percent of the states, while teachers screened more than half in 21 percent and parents or volunteers in another 18 percent.

In some states nurses do only a rescreening of children who failed the initial screening by teachers or parent/volunteers. Technicians are used almost exclusively for vision screening in two states.

In about 57 percent of the states, annual screening of schoolchildren is required or recommended. However, in answer to the question "How often are students usually screened?" three fourths of the states reported that vision screening is conducted annually. Another 11 percent reported that screening is done every two or three years. For the remaining states the frequency of screening varied or was not reported. In actual practice, however, annual screening does not always mean that every child is screened every year.

In what grades are students screened? Is each child tested every year from the first through the twelfth grades? It appears that only in the first grade are all children screened in each of the 28 states. After this initial screening, there is a fluctuating decline in the proportion of states that screen each grade to a low point in the last year of school (see Table 2). About 62 percent of the states screen twelfth grade students. It was also found that the odd grades, through the seventh, tend to be screened by a higher proportion of the states than do the even grades.

TABLE 2.—GRADES IN WHICH SCREENING IS DONE IN 28 STATES [1]

Grade	States screening	
	Number	Percent
1	26	100.0
2	20	76.9
3	25	96.1
4	20	76.9
5	23	88.5
6	21	80.8
7	23	88.5
8	20	76.9
9	17	65.4
10	18	69.2
11	16	61.5
12	16	61.5

[1] Not included in breakdown are 2 States which did not give complete information on grades screened (1 screens at school entrance plus other grades; 1 screen grades 1 through 6 plus 2 additional grades).

The reporting of grades actually screened reveals that 54 percent of the states do in fact screen all students in each grade every year. A few states screen every other grade, and others reported that only children in the elementary grades are screened.

Among those states which do not screen all grades, there is considerable variation in the screening pattern.

The Snellen test, in one form or another, is required or recommended by 23, or 82 percent, of the 28 states, while the Massachusetts Vision Test battery is recommended in five states. Several states require or recommend additional tests (see Table 3).

More than one vision test is usually given as part of the screening procedure in two thirds of the states. Those administered include a test for distant vision, a test for detecting a muscle imbalance, a color vision test, and the plus sphere test. In 32 percent of the states only a Snellen test is given, with the Snellen Wall Chart the device most frequently used.

From the question on the criteria for referral, it was learned that 52 percent of the states refer a first grade child if he fails to read the appropriate number[3] of symbols on the 20/30 line. The remaining states refer the first grader if he fails on the 20/40 line. For the second grade the 20/30 line is used as the criterion for referral by 56 percent of the states and the 20/40 line by 44 percent. It is only at the third grade level that the 20/20 line is used as the criterion for referral and then by only 8 percent of the states. For this grade, 52 percent refer for failure on the 20/30 line and 40 percent for failure on the 20/40 line.

TABLE 3.—VISION TESTS REQUIRED OR RECOMMENDED AND USUALLY GIVEN IN 28 STATES[1]

Vision test	Required or recommended	Usually given[2]		
		Total	Required or recommended	Not required or recommended
Snellen wall chart	20	23	20	3
Snellen projector	2	3	2	1
Snellen good-lite	6	9	5	4
Stereo	2	4	1	3
Massachusetts vision test	5	8	4	4
Plus sphere	9	10	8	2
Muscle imbalance	5	6	4	2
Color vision	8	6	5	1

[1] 2 States do not require or recommend any test.

[2] Differences between usually given and required or recommended may be an indication of noncompliance.

The same criterion for referral is used for grades 4 through 12. In 24 percent of the states this criterion is failure on the 20/20 line, while for 60 percent it is failure on the 20/30 line and for 16 percent failure on the 20/40 line. Thus, it can be seen that failure on the 20/30 line is used as the criterion for referral for almost all grades in 3 out of 5 states.

Criteria for referral vary considerably from state to state. Some states use only one criterion for all grades screened. Others use one criterion for the lower grades and a different one for the upper grades. No consistent pattern evolved regarding the referral criteria.

VISION SCREENING LAW VS. NO LAW

Various screening practices were compared for states with a vision screening law and those without to determine what differences, if any, exist. Here again, only the 28 states which provided complete reports are considered.

For some aspects of the screening program it appears that significant differences exist between these two groups of states. One of the most striking differences is in the proportion of school districts having screening programs. Almost all the states with a law reported 100 percent coverage of their school districts, as compared with less than one third of the states without a law.

Not only do the states with a law have better school coverage, but they also have much better student coverage. In 90 percent of these states all children are screened in each grade every year, whereas only one third of those states without a law screen in grades 1 through 12 annually.

Differences are also quite apparent when the grades in which screening is done are compared. A high proportion of all states screen in the elementary grades (1 through 7). However, the frequency of screening in grades 8 through 12 is much higher for the states with laws.

With respect to the vision tests administered, it was found that states with vision screening laws are much more likely to give more than one type of test than are states without laws.

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[3] **This number was not defined and may vary from state to state.**

It appears, therefore, that a state with a school vision screening law generally provides better eye health care for its students. Since each child is screened more frequently, the possibility of detecting students in need of eye care is greatly increased.

SUGGESTIONS FOR PROGRAM IMPROVEMENT

From replies to the question "In your opinion, in what ways could the vision screening program be improved?" it seems that many of the agencies are aware of the deficiencies in their individual programs.

A comparison of replies from those states with a law requiring vision screening and those without such a law reveals pronounced differences. For those with a law, areas of improvement are related to follow-up and education of the public, while for those without laws, they are related to program centralization and standardization and improved reporting.

For both groups of states the need for better trained and/or more screening personnel appears to be the major requirement for program improvement. The second most important requirement noted was improvement in and extension of the actual screening program.

In states with screening laws, better follow-up of the children who are referred ranked as the third most important area for improvement. Third for those states without law is the need for increased treatment facilities.

SUMMARY

The results of a survey of state school vision screening programs are reported. Questionnaires were completed by all states, the District of Columbia, New York City, Puerto Rico, and three of the territories surveyed.

A detailed summary and analysis of the characteristics of the screening programs based on reports from 28 states are presented.

As a result of this survey some general observations and recommendations for program improvement can be made.

1. Current vision screening programs do not reach all school-age children in this country. In at least 26 states, less than 100 percent of the school districts are covered by the existing programs.

In an adequate eye health program is to be provided to all students, vision screening should be statewide and cover all school districts. In addition there should be comparable program in each private and parochial school.

2. The goal of each program should be an annual vision screening for each student in all grades. The various screening patterns indicate that while screening may be an annual event, only certain grades are screened each year.

Since some children with abnormal conditions may escape detection on several screenings, an annual screening is important. This is particularly so for the elementary grades where previously undetected conditions are most frequently picked up. An annual screening not only discovers children who may have eye problems previously unknown but also screens out those who have had some eye care but may need to be reexamined.

3. The shortage of personnel to do the screening was noted as a problem. In 60 percent of the 28 states, nurses or teachers are responsible for vision screening. The National Society has found in its preschool vision screening program that trained volunteers can ably administer vision tests with a high degree of efficiency. To relieve the personnel shortage, serious consideration should be given to the use of well-trained volunteers for both the initial screening and the rescreening of students. Teachers and nurses would then be freed from the task so that they can concentrate on the important duties of follow-up on referrals and interpretation of the program and results to parents.

4. Adequate information is not available on the completeness of follow-up on students who are referred for a complete professional eye examination. Undoubtedly, this is an area where most programs can be improved. The nurse or teacher should be responsible for this phase of the program. Each student should be followed to assure that he has received an examination and whatever care may be indicated.

For students who are already under care nurses and/or teachers should see that periodic examinations, as recommended by the professional examiner, are secured.

5. Uniform and adequate standards for screening procedures should be set at the state level in consultation with professional eye specialists. To insure reasonable conformity with the standards, administration of the statewide program should be the responsibility of one or both of the state agencies concerned—Health and Education.

The National Society's Advisory Committee on Vision Screening is reviewing its recommendations concerning screening tests and procedures, grades to be screened, and criteria for referral. These will be made available in a Society publication in the near future.

6. Improved reporting of local program results to the state agency responsible for overall supervision of the program is needed. It is evident that in some states the local schools either are not required to, or do not, report program results to the state agency. Adequate statistical reporting of program results from each school, school district, or local health department would provide the state agency with a basis for evaluating the effectiveness of the program and for assisting with its improvement where indicated.

The state agency should provide standard record and reporting forms so that comparable data will be collected from each local agency. For evaluation, information is needed on the number of students screened, referred, examined, and found to have abnormal eye conditions, as well as on the number already under care.

Most of the states are very much aware of which phases of their screening program need strengthening and are presently working toward making whatever changes or improvements are necessary. We are hopeful that with time the ultimate goal of providing each student with the best possible health care program, of which vision screening is a vital part, will be attained.

STATE OF MICHIGAN, DEPARTMENT OF PUBLIC HEALTH,
Lansing, Mich., October 10, 1975.

Hon. CARL D. PERKINS,
Chairman, House of Representatives, Committee on Education and Labor, Subcommittee on Elementary, Secondary and Vocational Education, Rayburn House Office Building, Washington, D.C.

DEAR CONGRESSMAN PERKINS: We read with much interest H.R. 4002, the "National Comprehensive Vision Care Act of 1975." A similar program was begun in Michigan in 1947, and now there is state-wide screening of school-age and preschool children. You may be interested in the enclosed article, "School screening in the State of Michigan," which contains some details regarding the program.

Also enclosed, is a copy of Act 282, P.A. of 1968 with regulations which mandated screening of preschool children for defects of vision. For several years now, practically all Michigan children are screened or examined by eye doctors before starting first grade.

Our program has three major components which bear upon cost to state and families:

Administration is concerned with training and supervising screening technicians, with program implementation and interpretation, and with maintaining a liaison and working relationship with eye doctors, schools, local health departments, and local communities and citizens. Administrative cost to the state is about 15¢–20¢ per child screened.

Identification is done by technicians who are locally employed throughout our 83 counties. Cost of screening is about 50¢–60¢ per child in school, and about $1.00 per child for preschool screening.

The Treatment phase includes follow-up of referrals (On the average, about 10% of children are found to be in need of eye care) to eye doctors and alerting schools to children having more serious problems. Local health departments arrange eye care for families that are medically indigent while others pay the costs of eye examinations and glasses or other care needed. School screening is done biennially.

We find the highest incidence of eye problems among children occurring during adolescence, and so we always recommend that screening be carried through the secondary schools.

Our program addresses itself to problems of vision and eye defects which children may have. These are the characteristics of vision and eyes that all disciplines agree upon as being important. We do not include "perceptual screening." Since perception is a function of the brain, we would need to involve pediatricians, neurologists, and psychologists, and we would no longer be talking about vision defects. We do no testing of "developmental vision," which means different things to different disciplines and arouses great controversy among them. We would be hard-pressed to define the terminology.

We have a great deal of information concerning vision screening. If you feel that it could in any way be useful to you, please let us know.

Sincerely,

MAURICE S. REIZEN, M.D., *Director.*

Enclosures.

ACT 282, 1968—STATE OF MICHIGAN, 74TH LEGISLATURE, REGULAR SESSION OF 1968

(Introduced by Reps. Mahoney, DeStigter and Novak)

ENROLLED HOUSE BILL NO. 2152

An Act to amend section 376 of Act No. 269 of the Public Acts of 1955, entitled "An act to provide a system of public instruction and primary schools; to provide for the classification, organization, regulation and maintenance of schools and school districts; to prescribe their rights, powers, duties and privileges; to provide for registration of school districts, and to prescribe powers and duties with respect thereto; to provide for and prescribe the powers and duties of certain boards and officials; to prescribe penalties; and to repeal certain acts and parts of acts," as amended by Act No. 199 of the Public Acts of 1966, being section 340.376 of the Compiled Laws of 1948.

THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

Section 1. Section 376 of Act No. 269 of the Public Acts of 1955, as amended by Act No. 199 of the Public Acts of 1966, being section 340.376 of the Compiled Laws of 1948, is amended to read as follows:

Sec. 376. All children enrolling in any public, private, parochial or denominational school in Michigan for the first time shall submit either a statement signed by a physician that they have been immunized or protected against smallpox, diphtheria, tetanus, pertussis, measles and poliomyelitis and tuberculin tested to determine the presence of infection from tuberculosis; a statement signed by a parent or guardian to the effect that the child has not been immunized and tuberculin tested because of religious convictions or other objection to immunization; or a request signed by a parent or guardian that the local health department give the needed protective injections and diagnostic test.

In addition, the parent or guardian of each enrolling child shall submit a statement (1) signed by a district, county, or city health department director stating that the child has passed the department of public health preschool vision screening test, or (2) signed by a licensed medical or osteopathic physician or a licensed optometrist indicating that the child has had his eyes examined during the preschool years after age 3 and prior to initial entrance. Neither vision test enumerated in (1) or (2) above is required if there is a statement signed by a parent or guardian to the effect that the child cannot be submitted to such test because of religious convictions. The Michigan department of public health shall promulgate rules for the implementation of this section.

The state public health director shall appoint an advisory board consisting of equal numbers of ophthalmologists and optometrists. The board shall advise and assist the state public health director with vision programs.

Prior to November 1 of each year, the administrator of each school shall provide the state director of public health with the immunization and tuberculin status as well as a vision report of each entering child. This information shall be transmitted through the approved local full-time health department wherever the same exists and shall be on forms provided by the state director of public health or otherwise reported in a manner approved by it.

The vision testing provisions of this bill shall take effect September 1, 1970.

DEPARTMENT OF PUBLIC HEALTH, DIVISION OF CHILD HEALTH, PRESCHOOL VISION SCREENING

Filed with Secretary of State, July 16, 1976. These rules take effect upon filing with the Secretary of State.

(By authority conferred on the department of public health by section 376 of Act No. 269 of the Public Acts of 1955, as amended, being section 340.376 of the Compiled Laws of 1948.)

R 325.1481. Tests, kinds and procedures.

Rule 1. (1) Vision tests of preschool children shall include tests for monocular and binocular visual acuity and for eye muscle balance.

(2) Public health vision screening tests shall be given by trained persons. The method of their training, and the procedures used in testing, shall be approved by the director of public health.

[From the Sight-Saving Review, vol. XXXIV, No. 1, 1964]

School Vision Screening in the State of Michigan

(By Robert T. Blackhurst, M.D., Chairman, Ophthalmology Section, Michigan State Medical Society's Child Welfare Committee and Edmund Radke, M.ED., Chief, Vision Section, Maternal and Child Health Division, Michigan Department of Health)

Thousands of Michigan children are enjoying improved vision as the result of of a program whose outstanding features are the close cooperation of eye doctors, trained personnel to do screening, and sound administration policies.

During the past 16 years the Maternal and Child Health Division of the Michigan Department of Health, local health departments, schools, and eye doctors in Michigan have cooperated in the development of a well-rounded eye health program that serves Michigan and the state's school population of more than two million, as well as thousands of preschool children. The program has included: health education regarding the importance of eye health; accident prevention; maintenance of a state register of visually handicapped children; the development and evaluation of standards and techniques for vision screening at the school and preschool levels; training and certification of vision technicians; and cooperation with local health departments and schools in the development of sound administrative policies and procedures for local vision screening programs.

Widespread acceptance of screening programs has been gained largely because of three factors: (1) active interest, support, and efforts of the Michigan State Medical Society in assisting to set standards of screening; (2) employment of trained personnel to do the screening; and (3) sound administration of screening programs on the part of local health departments.

Periodic examination of all children by eye doctors is an ultimate goal.[1] When that goal is reached we can be assured that all children who need eye care receive it. Short of this we believe it becomes incumbent upon parents, health department directors, school administrators, eye doctors, and all who are interested in the health of children to support programs which identify those who need eye care. We believe that all children *deserve* to see well. Only then are they able to take full advantage of an education which is oriented to vision. We believe in programs which accomplish this end.

ESTABLISHING STANDARDS

One of the first considerations in setting up a vision screening program is that of standards. Should the standards be high, with the result that a great many children fail and over-referrals plague the program, or should they be so low that relatively few fail and under-referrals occur? The first strength of the Michigan program lies in the method of devising and evaluating them.

In setting standards vision consultants on the staff of the Maternal and Child Health Division of the Michigan Department of Health work closely with the Section on Ophthalmology of the Michigan State Medical Society's Committee on Child Welfare. Periodic meetings are held where programs are reviewed, standards are re-evaluated, and modifications made when indicated. A great deal of consideration is given, for example, to the kinds of tests used and to the referral standards which will result in getting children who need treatment to an eye doctor.

The Snellen E test for visual acuity, traditionally the mainstay of vision screening procedures, is incorporated in the battery of tests used in Michigan. Its popularity is attributable to a number of factors:

1. It finds a large number of children who have vision defects.

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[1] Vision Screening in Schools. *Sight-Saving Review*, Vol. 31, No. 1, Spring, 1961.

2. Of the children who fail, a large percentage are found to need treatment by eye doctors, if the test is properly given. In Michigan well over 90 per cent of the children who fail receive such treatment.

3. It is inexpensive. Snellen charts are readily available from local health departments, and very little in the way of additional equipment is needed.

4. The test may be administered with relative ease. In fact, administering these tests too often appears deceptively simple. When proper distance and lighting and procedures are not rigidly adhered to results are poor.[2]

The level of referral warrants careful consideration. Using 20/20 as a pass-fail line on the Snellen chart has been dismissed by most eye doctors as simply too high a standard for finding children with defects that need treatment. The 20/40 line is too low a standard, for if a child has 20/20 vision in one eye and 20/40 in the other he is missed. Yet this child with visual acuity that varies by two lines from one eye to the other may well need treatment. The 20/30 line would find him; therefore, the 20/30 line is used in Michigan as it is in most states.[3]

When limited to the Snellen chart, however, screening programs do not fully meet the needs of children in relationship to their performance in school. Very often failure on this test will identify a myopic child who may be doing very well.[4] Educators who are interested in finding out why a child is doing poorly may see limited value in identifying myopic children and getting them treated to improve reading ability, for example. It is more likely that children who are hyperopic or those with a muscle balance problem are having difficulty in academic achievement. Further tests to locate these children are indicated.[5]

In the second test employed in the screening battery a child is asked to read 20/20 Snellen E symbols while wearing a 1.75 plus sphere lens. If he reads 4 of 6 symbols correctly with either eye he fails and is referred for examination by an eye doctor. The results of this test, in terms of treatment received, vary according to the age of the child. For those in the first three grades the percentage who receive treatment is comparatively low; for those in high school it is very high. Many eye doctors will not treat a child with a small amount of hyperopia unless there is an accompanying symptom which would indicate treatment. Nevertheless, it is important that these children be identified and examined.[6] Although those who fail this test would comprise no more than one or two per cent of the school population, academic success of these children may be involved.

The third test employed in Michigan is one for eye muscle balance given at both far and near points. At present, referral to an eye doctor is made only on the basis of the far-point, or 20-foot test. The referral levels are 6 prism diopters of esophoria, 4 of exophoria, and 1.25 of hyperphoria. Standards for the 14-inch test are 6 prism diopters of esophoria, and 8 of exophoria. Results of the near-point test are being studied, but children who fail are not being referred.

The vision screening procedure incorporates a retest one week after the original test for all children who fail; they are referred only after two failures. This procedure significantly lowers the number of over-referrals, especially with very young children. It is not uncommon for them to be apprehensive of a procedure that is strange to them, but tenseness practically disappears with the retest because they know what to expect.

In addition to screening tests teachers are encouraged to refer children to eye doctors when symptoms indicate the need for an eye examination. They are also asked to refer children who are a year or more retarded in reading ability so that the possibility of an uncorrected vision defect can then be ruled out as a contributing factor.

VISION TECHNICIANS

A second strength of the Michigan vision program lies in the type of persons employed to give the tests, and in their training. We believe, and it is generally recognized, that specially trained personnel must be employed when equipment beyond the Snellen chart is used.[7] Vision technicians, who are employed by local health departments, are trained and certified by vision consultants of the Maternal and Child Health Division. Annual two-day refresher conferences are held to assure a continuing high level of performance.

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[2] Sloane, A. E., and Rosenthal, P. School Vision Testing. *Archives of Ophthalmology*, Vol. 64, Nov., 1960.

[3] Belloc, N. B. School Vision Screening in the United States. *Sight-Saving Review*, Vol. 32, No. 4, Winter, 1962.

[4] Austin, C. A., et al. Teaching About Vision. National Society for the Prevention of Blindness, New York, 1960.

[5] Diskan, S. M. A New Visual Screening Test for School Children. *American Journal of Ophthalmology*, Vol. 39, March, 1955.

[6] The National Medical Foundation for Eye Care. Identification of School Children Requiring Eye Care. Washington, D.C., 1959.

Many of the technicians who do the screening are nurses who are not working on full-time staffs. Due to a special interest in vision, or their preference to work on a limited program, they choose to do vision screening. Persons with other backgrounds prove to be satisfactory when they have demonstrated an aptitude for this work. These technicians become experts. The success of many local programs is a tribute to their skill in working with children and to the care they take in their work. They learn to differentiate between the child who does not understand and one who does not see well. They put the apprehensive child at ease and get the reluctant one to cooperate. And all the while they maintain a friendly and professional attitude which instills confidence on the part of school personnel and pupils.

In over half the 1,600 school districts in Michigan 190 vision technicians are doing the screening, using uniform procedures and reporting under uniform standards. Results can be readily measured. An average of 11.5 per cent of the children screened fail and are referred to eye doctors. Nine out of ten referred are found to need treatment for some eye disorder. As a result thousands of children in Michigan benefit.

HEALTH DEPARTMENT ADMINISTRATION

It has been observed that no program is stronger nor weaker than its administration. The finest standards and equipment and the best trained personnel would count for little if improperly managed. In Michigan an important strength of vision screening programs lies in the strong administrative participation of local health departments. Certified vision technicians are employed to work right along with administrative, clerical, and nursing staffs. The vision technician is really the middle-man, or more likely middle-woman, in the whole program. Setting up the program precedes her work, and follow-up procedures come after. Public health nurses play a vital role in seeing to it that children get eye examinations when referred. Sometimes local health departments work with a critically limited staff of nurses, and so supplementary means of followup must be and are employed. When not done through personal contact, follow-up can be encouraged and information obtained by means of the telephone or form letter.

Vision screening programs have sometimes been evaluated in terms of follow-up percentage where follow-up means getting information back that a child has received an examination and subsequent treatment when needed. However, it is extremely difficult to generalize about this. Is a program good where a follow-up of 50 per cent is reported, or is it good only when 80 or 90 per cent is reported? The answer would vary for different communities.

In a culturally depressed area, for example, it has been our repeated experience that as high as 24 per cent of the school children will fail the Michigan battery of tests. Of this 24 per cent follow-up reports can probably be obtained on about half. This means that if we were to screen 1,000 children, and refer 24 per cent, half would send in reports of eye examinations and we would have complete follow-up on 120 children.

On the other hand, if we should go into an economically favored area and screen 1,000 children in the same manner considerably fewer, 8 to 12 per cent, would fail and be referred. In a very high area the number would probably not exceed 10 per cent, or 100 children. Obtaining eye examination reports would be accomplished more easily in such an area. We might receive reporting on 80 per cent of these children. So we have the situation where we know that 80 children have had examinations in an economically favored area, while in an economically depressed one 120 children have had examinations as a result of a similar expenditure of time, effort, and money on the part of the screening agency.

DETROIT PROGRAM

Recognizing the many variable factors that may affect a vision screening program—such as availability of treatment facilities and methods of follow-up—

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[7] The American Public Health Association, Inc. Services for Children With Vision and Eye Problems. N.Y. 1956.

it soon becomes apparent that a program must often be tailored to operate most effectively in a particular area. The procedure adopted in Detroit, where nearly 400,000 pupils are enrolled in over 400 schools, is herein described.

Prior to initiating a program that might result in thousands of children being referred to eye doctors, facilities for treatment were surveyed. It was found that in addition to several hundred eye doctors, including ophthalmologists, optometrists, and osteopathic eye specialists, practicing in the Detroit area, many hospitals operate out-patient eye clinics. Satisfied that adequate facilities for treatment existed, Dr. C. Dale Barrett, director the Maternal, Child, and School Health Division of the Detroit Department of Health, initiated a limited program.

A program supervisor was employed, and ten technicians were trained by vision consultants on the Michigan Department of Health staff. A state consultant was assigned to assist in developing the program.

After consultation with local eye doctors the Detroit Department of Health adopted a set of referral levels for a battery of three tests to be used in screening children in the 1st, 7th, and 10th grades.

Standards were the same as those used throughout the state with the following exceptions:

1. Test III, near Point—All children who failed this test at first and second screening were referred.

2. Test III—For the first grade, phoria referral levels were increased to 12 prism diopters of both esophoria and exophoria for near as well as far.

If a child failed rescreening was done one week later. A second faliure was necessary before the child was referred.

All screening was done with stereoscopic instruments which elimintae the need for a great amount of space and special lighting. It was demonstrated that this type of instrument could be used successfully in a classroom while teaching went on, or in a nearby hallway. It was even used in a utility room when space was critically limited.

SCREENING RESULTS

When all screening had been completed the Detroit Department of Health reported as follows for the period March 12–June 11, 1962:

1. The children in the first, seventh, and tenth grades in 167 schools were screened: 122 were public schools and 45 were parochial.

2. A total of 36,554 children were screened: 30,687 were from public schools, 5,867 from parochial schools. Of the 36,554 children, 14,734 were in the first grade, 11,626 in the seventh grade, and 10,194 in the tenth.

3. A total of 29,475 or 80.6 per cent passed the screening test while 6,091 or 16.7 per cent failed test and retest and were referred to eye doctors. Another 151 or .4 per cent failed the test but were not referred because of a permanent defect (e.g. blind in one eye) or a known recent examination. An additional 837 or 2.3 per cent of the total screened failed the first test but were not referred because they were absent for the retest. (See Chart I)

Among the 36,554 children screened were 4,742, or 13 per cent, who were wearing glasses. Of these, 1,417, or 29.8 per cent, failed the screening. The percentage of children wearing glasses would, of course, be higher in the 10th grade than in the first grade. For most of the referrals it was found that new glasses were prescribed. Some needed a change in prescription while others probably had outgrown the frames.

The total failure rate for all children was 19.4 per cent which included those referred, those who failed the initial screening but were absent for retest, those known to be under treatment, and those with a permanent disability. The 16.7 per cent referred was considerably higher than the 11.5 per cent average for the state as a whole. In terms of the entire school population of Detroit, about 60,000 children would fail the screening and 90 per cent of them, or 54,000, need treatment for a vision defect.

FOLLOW-UP PROCEDURE

The follow-up procedure on referrals included notification mailed to parents concerning their child's failure to pass the screening test. A doctor's report form was included and parents were asked to have it filled out and returned to the health department. If no report were forthcoming within six weeks a follow-up letter was sent. In addition, public health nurses who serviced participating schools urged parents to take their children to an eye doctor. In many instances teachers, counselors, and school principals also took an active part in seeing that children got examinations. As a result of this effort 2,958 doctors' reports were returned to the health department after children had been examined. This amounted to 49 per cent of the 6,091 children referred.

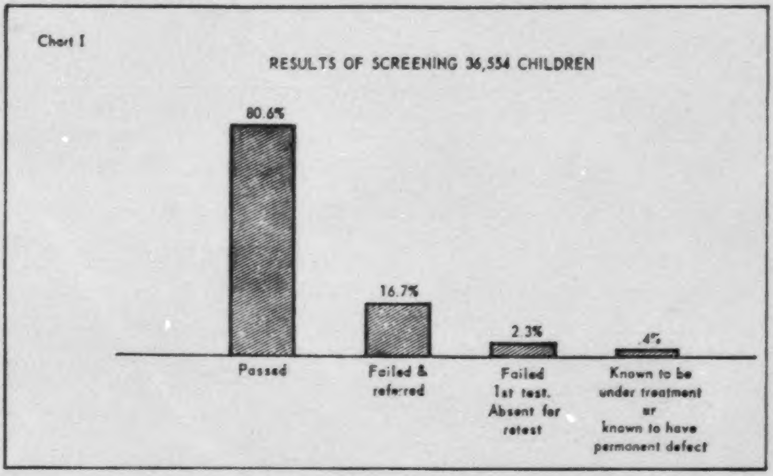
Chart I

RESULTS OF SCREENING 36,554 CHILDREN

A follow-up survey was made of those children for whom an eye doctor's report had not been received. The parents of these children were interviewed by telephone or through a home visit. It was found that approximately 50 per cent of them had been examined. A fourth of the nonresponders said that they had not followed up on the referral. Others came from highly transient areas and could not be located. There are some schools that have a 100 per cent turnover in the course of a year, and letters were returned marked "Moved—Address Unknown." One and a half per cent of the children referred were not wearing prescribed glasses at the time of the screening test. Parents were apprised of this situation when it occurred.

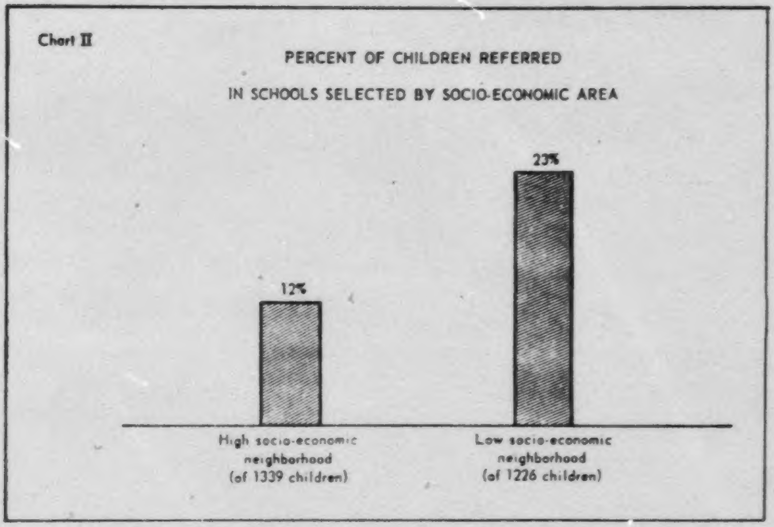
Chart II

PERCENT OF CHILDREN REFERRED

IN SCHOOLS SELECTED BY SOCIO-ECONOMIC AREA

The pattern in which eye doctors' reports were received was related to the socioeconomic status of the various areas throughout the city just as the referral rate was so related. (See Chart II) Partents of children in a high school, a junior high, and two elementary schools in a high socioeconomic neighborhood sent in reports on 64 per cent of the referrals. The corresponding figure in a low socioeconomic neighborhood was 34 per cent.

TREATMENT REPORTED

When the 2,958 doctors' reports were examined it was found that 2,710, or 91 per cent of the referrals, received some kind of treatment. Glasses were prescribed in 73 per cent of the cases. Other forms of treatment were medical, surgical, and exercises. In some cases the eye doctor gave no immediate treatment, but advised that the child return in a few weeks or months. If this were done we assumed that some eye condition needed to be observed, and this, although a relatively small percentage, was also included in the number treated.

In general, older children were more likely to receive treatment than the younger. Of the 7th and 10th graders 95 per cent received treatment, compared to 86 per cent of the 1st graders. (See Chart III)

The doctors' reports served another purpose. They were useful in helping to locate partially seeing children who might be candidates for special education programs. In order to screen these out several things were looked for on the reports:

1. Children diagnosed as having nystagmus or cataract.
2. Young children who had a high correction, e.g. +4.00 or −6.00.
3. Children who had recent serious eye injuries.
4. Children with corrected visual acuity of 20/70 or less in the better eye, or even 20/50 for a younger child.

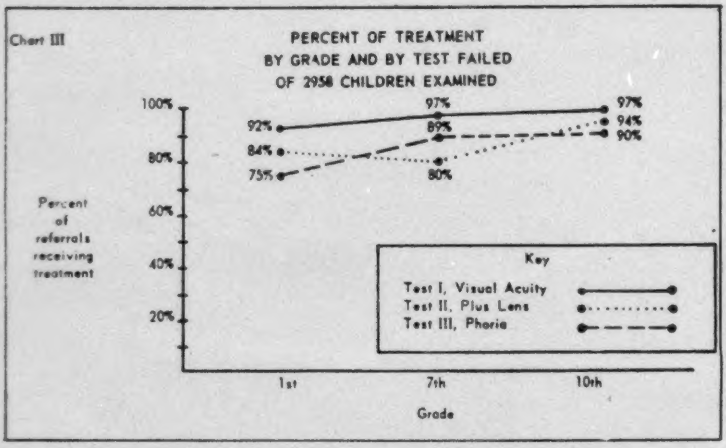
Chart III

PERCENT OF TREATMENT
BY GRADE AND BY TEST FAILED
OF 2958 CHILDREN EXAMINED

Such children were referred to a clinic where an ophthalmologist on the staff of the Detroit Department of Health examined them and the supervisor of the classes for the visually handicapped interviewed parents, examined school records, and made an educational recommendation.

This program in Detroit re-emphasized the need for continuing vision screening. The following year 100,000 children were screened in a similar manner; 16,700 failed and were referred. Follow-up reports on these children are pending.

Dr. Barrett reported: "Virtually no complaints have been made by parents or doctors indicative of over-referrals or any other dissatisfaction with the program. In the more than 20,000 referrals resulting from the Detroit screening program fewer than a half-dozen complaints have been received from parents and none from the hundreds of practicing ophthalmologists and optometrists who have examined these children. On the other hand, favorable comments were expressed by many people throughout the community."

It is felt that similar results may be obtained in such programs where there is close cooperation on the part of eye doctors, trained screening personnel, and sound administrative policies.

AMERICAN SPEECH AND HEARING ASSOCIATION, WASHINGTON D.C

October 17, 1975

Hon. Carl D. Perkins, Chairman
Subcommittee on Elementary, Secondary
and Vocational Education
U. S. House of Representatives
Rayburn House Office Building
Washington, D. C.

Dear Chairman Perkins:

The American Speech and Hearing Association (ASHA) congratulates the Subcommittee for the initiative it has taken in fostering national discussion of the general subject of the health screening of school children.

In addition to expressing the hope that statutory authority for such screening will soon be made available, it is the purpose of this letter to offer the Subcommittee the benefit of ASHA's thinking on the mechanisms that should be available in the schools for identifying and assessing (i.e., screening) hearing, speech, and language disabilities in children. We respectfully request that this letter and its attachments be included in the Subcommittee's record of the October 6 hearings.

That screening mechanisms ought to be made available through the public school systems of the Nation seems to us to be a non-debatable issue. Most hearing, speech and language problems can be corrected or ameliorated by early detection and appropriate follow-up services; the potential of children whose educational, social, vocational, and emotional horizons might otherwise be severely diminished by handicapping conditions can be preserved.

Estimates of the number of children with communicative problems and needs vary, but present information available indicates that the number of children of all ages with all kinds and degrees of communicative disorders exceeds three million. According to the National Institute of Neurological Diseases and Stroke (NINDS), significant incidence rates for communicative disorders have been ascertained in children.

INCIDENCE OF COMMUNICATIVE DISORDERS IN CHILDREN[1]

Communicative Disorders	Number per 10,000
Defects of speech affecting articulation	500
Severe hearing impairment	150-300
Voice problems	60
Stuttering (dysfluency)	60
Retarded speech development unrelated to deafness	50
Organic disorders affecting speech (cleft palate, facial malformations)	20
Organic speech disorders resulting from cerebral palsy . .	13
Total deafness	12

The incidence and prevalence of language and language learning problems is not known. Only recently has there been increased awareness of the problems many children have in using linguistic symbols in comprehension, transformation and/or expression for communication.

The effects of communicative disabilities may be prolonged and pervasive: academic failure, psychosocial maladjustment and loss of future earning power can stem from the lack of habilitative opportunities given early in the affected individual's life.

Schools have the responsibility to provide identification and assessment mechanisms, habilitative services, and instructional programs for the appropriate management of childhood communicative impairments as a part of their overall responsibility to educate all children and provide for the special needs of exceptional children. This obligation has been reaffirmed recently in many states as a result of either:

- lawsuits involving governmental responsibilities in serving handicapped children; or
- statutes passed by state legislatures making mandatory the provision of comprehensive, state-supported education and services for all handicapped children, including those with communicative disorders, deviations and needs.

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[1] NINDS Research Profile: No.4, Hearing, Language and Speech Disorders (Washington, D.C.: U.S. Government Printing Office, 1967).

Information from the Council for Exceptional Children's State-Federal Information Clearinghouse reveals the following breakdown of services available to pupils with communicative disorders:

COMMUNICATIVELY IMPAIRED CHILDREN RECEIVING EDUCATIONAL SERVICES[2]

	Deaf	Speech Impaired	Hard of Hearing	Language Impaired
Estimated number of children	45,681	2,145,647	260,981	(not given)
Number of children receiving services	20,771	1,122,232	44,430	(not given)
Percentage of children receiving services	45%	52%	17%	(not given)

We contend that the more than three-million figure (representing the number of children with communication disorders) would be increased significantly once all children were screened for hearing, speech, and language disorders. We would hasten to add, however, that once we begin to identify the existence, nature, and severity of communication disorders in children, the numbers of children who either receive no habilitative and special instruction services, or receive inappropriate services will be drastically, irreversibly reduced. Screening programs, obviously, provide the key to such identification.

Two years ago, with grant assistance from the Bureau of Education for the Handicapped (DHEW, U.S. Office of Education)[3], ASHA's School Affairs Office developed, "for consideration by state officials, a legally formulated set of Model Regulations to be used in accordance with law to support quality, comprehensive school language, speech and hearing programs."[4]

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[2] Adapted from F. J. Weintraub et al. State Law and Education of Handicapped Children: Issues and Recommendations (Arlington, Va.: Council for Exceptional Children. 1971).p.22.

[3] Grant No. OEG-0-90302169-4324(607), P.L. 91-230, Title VI.

[4] Project Upgrade: Model Regulations for School Language, Speech, and Hearing Programs and Services (Washington, D.C.: American Speech and Hearing Association, 1973).

Section 502 of the model regulations outlines the screening criteria school districts should adopt. The section is quoted here in its entirety[5]:

> "Section 502. Identification and Assessment.
>
> Each school district shall establish and maintain an ongoing identification, assessment and diagnostic program to ensure early identification and appropriate placement of pupils requiring language, speech, or hearing services. The program shall include:
>
> 1. Speech and language screening consistent with the following:
>   a. The population to be screened and the screening model(s) used shall be specified.
>   b. Qualified personnel shall conduct or supervise screening programs. Support personnel may assist in screening under supervision of a qualified professional after receiving appropriate training.
>   c. The tasks, items or tests used in screening shall test for articulation, language, voice and fluency, and shall be carefully selected to ensure their appropriateness for the population screened. Pertinent factors are age level, socioeconomic status and cultural background of pupils including determination of each pupil's primary language, and practicability of administration.
>   d. Measures shall be included to secure uniformity of administration by all examiners.
>   e. Control measures shall be included to validate and where necessary to correct testing procedures and results.
>   f. Diagnostic sessions or referrals for further evaluation shall be arranged for those who show problems significant enough to warrant further assessment.

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[5] Project Upgrade: Model Regulations for School Language, Speech, and Hearing Programs and Services (Washington, D.C.: American Speech and Hearing Association, 1973).

2. Provision for identification audiometry, as follows:

a. The hearing screening program shall be based on audiometric testing of individuals or groups of pupils. Individual tests shall be administered to pre-kindergarten through third-grade pupils except in those cases where the [Department] approves computerized or other appropriate procedures. Individual or group tests may be used with pupils above the third-grade level.

b. Screening audiometers shall be calibrated to American National Standards Institute (ANSI) specifications initially, and recalibrated as needed, and at least [annually]. Daily listening checks shall be performed to determine that audiometers are grossly in calibration and that no defects exist in major components.

c. The ambient noise level in any space used for audiometric screening shall not exceed 51 dB.

d. Identification audiometry programs shall be conducted or supervised by a qualified audiologist or speech pathologist with appropriate training in audiology. Support personnel may administer hearing screening tests under the supervision of a qualified speech pathologist or audiologist, after appropriate training. Control measures shall be included to validate and, where necessary, correct testing procedures.

e. Screening procedures shall be administered uniformly by all examiners, with specified test frequencies, screening level and criteria for failure. Minimum procedures shall include: screening at 20 dB HTL at 1000 Hz and 2000 Hz and at 25 dB HTL at 4000 Hz; failure to hear at the recommended screening level at any frequency is the criterion for failure.

f. Rescreening of failures shall be provided within a reasonable period after the initial testing, preferably within one week.

g. Comprehensive audiological evaluation shall be secured for failures on rescreening and be administered by qualified audiologists.

h. Pupils shown to have hearing loss as a result of comprehensive audiological assessment shall be referred for otologic examination to a licensed physician.

3. A referral system that includes contacts with teachers, school administrators, parents and others having specific rdsponsibilities for or knowledge of pupils in need of language, speech, and hearing services. The referral system shall specify procedures for:

a. Securing initial language, speech, and hearing screening for previously unidentified pupils.

b. Obtaining medical examinations, social case work, psychological testing, educational evaluation and other services considered necessary for pupils as a result of language, speech, and hearing screening or assessment.

4. Language, speech, and hearing diagnostic services shall be provided by speech pathologists, audiologists and teachers of the hearing impaired for pupils detected by screening or referral. As a minimum, the diagnostic procedure shall include assessment of articulation, language, fluency, voice, auditory acuity and perception, and examination of the peripheral speech mechanism. Additional information such as case history (medical-developmental-family-social), physician examination results, academic history, psychological evaluation and educational evaluation shall be obtained for pupils who need more comprehensive diagnostic services.

5. Specialized tests, materials and equipment appropriate to the diagnostic process shall be available for the use of qualified language, speech, and hearing program staff.

a. When assessment procedures and instruments are selected for use in the local district, adjustments shall be made where necessary to account for the sociocultural and linguistic home environments of pupils. The appropriateness of such procedures and instruments shall be considered in administering tests and evaluating the results.

b. Tests to determine the intellectual functioning of hearing impaired pupils shall be selected from non-language performance scales standardized on, or adapted for, the hearing impaired.

6. A registry of identified pupils shall be maintained by the school district and provision made for its periodic review. Adequate records of all pupils screened shall be maintained.

7. If the screening and assessment procedures required by these regulations are performed by an agency other than the school district it shall be the duty of the school district to assure that these requirements are met."

Mr. Chairman, ASHA has gone substantially beyond these screening guidelines, into the areas of the specific procedural concerns they suggest. Insofar as speech and language screening is concerned, for example, ASHA's Task Force on Children Handicapped in Language Development (a.k.a. the ASHA "CHILD" Project) is now in the final stages of writing a report on its creative two-year study of new mechanisms for identifying and treating speech and language disabilities in children. We shall be pleased to provide the Subcommittee with a copy of the Task Force's final report soon after its publication. I know you will find its contents as comprehensive as the hearing screening data provided hereinafter.

The specifics relative to screening audiometry (i.e., hearing screening) are available in the attachments to this letter.

ATTACHMENT A -- "Guidelines for Identification Audiometry" (developed by the ASHA Committee on Audiometric Evaluation), Asha: A Journal of the American Speech and Hearing Association (Washington, D.C.: February 1975), pp.94-99.

ATTACHMENT B -- "Identification Audiometry: Definition, Objectives, and Program Responsibility," Journal of Speech and Hearing Disorders; Monograph Supplement Number 9 (Washington, D.C.: September 1961), pp. 9-20.

ATTACHMENT C -- "Identification Audiometry for Preschool Children," ibid., pp.21-25.

ATTACHMENT D -- "Identification Audiometry for School-Age Children: Basic Procedures," ibid., pp. 26-34.

ATTACHMENT E -- "Identification Audiometry for School-Age Children: Implementing the Program," ibid., pp.35-41.

ATTACHMENT F -- "Hearing Levels in Children and Implications for Identification Audiometry," ibid., pp. 52-62.

ASHA stands ready to provide any additional input and assistance. We most enthusiastically support the Subcommittee's initiatives and look forward to cooperating with its members and staff in the development of appropriate child-screening legislation.

Sincerely,

Richard J. Dowling

Richard J. Dowling, Director
Governmental Affairs
Department

Attachments

GUIDELINES FOR IDENTIFICATION AUDIOMETRY

ATTACHMENT A

EDITOR'S NOTE: *The set of "Guidelines for Identification Audiometry" was approved by the ASHA Legislative Council in November 1974. The following members of the ASHA Committee on Audiometric Evaluation developed these guidelines: J. B. Chaiklin, N. T. Hopkinson, J. I. Graham, Z. G. Shoeny, F. L. Sonday, V. W. Byers, R. M. McLauchlin, and W. R. Wilson, Chairman. ASHA encourages the professional community to use these guidelines in clinical practice.* —K.O.J.

The set of *Guidelines for Identification Audiometry* is the second of a series developed by the Committee on Audiometric Evaluation, under the Office of Vice-President for Clinical Affairs of the American Speech and Hearing Association (ASHA).

Each of the guidelines presents a recommended set of procedures based on existing clinical practice and research findings. The spirit of these guidelines is not to mandate a single way of accomplishing the clinical process; rather the intent is to suggest standard procedures that, in the final analysis, will benefit the persons we serve. The intention is to improve interclinician and interclinic comparison of data thereby allowing for a more effective transfer of information.

The specific purpose of these guidelines is to detail procedures for accomplishing rapid and efficient identification of hearing impairment, particularly for use with young children.[1] As such, they represent an update of the procedures for identification audiometry for school-age children specified in the *Journal of Speech and Hearing Disorders* Monograph Supplement Number 9, "Identification Audiometry" (Darley, 1961). The current need for these guidelines is apparent with the development of increasing numbers of identification audiometry programs administered by state departments of education or health, the development of state mandatory special education statutes, and Medicaid guidelines for Early and Periodic Screening, Diagnosis, and Treatment (EPSDT).

For the most part, the philosophy and procedures laid out in these guidelines are based on and supported by published data. ASHA invites data-based input for future modifications of the guidelines.

SCOPE

A primary goal of identification audiometry using pure-tone air-conduction stimulation is to identify persons who have hearing impairments that interfere with or that have potential for interfering with communication. These guidelines focus on use with children of nursery-school age through grade three because early identification of communicative problems in this age group will permit maximum habilitation and avoidance of potential educational problems. Belkin, et al. (1964) have reported successful large scale individual pure-tone screening tests with children as young as three years of age. In addition, it is this age group which, in our society, is most often involved in the formal educational process through preschools and regular schools. While these guidelines focus on use with young children, they are equally applicable for use with older children and adults.

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[1] The *Guidelines for Identification Audiometry* is written with emphasis on the testing of children, however, the approach is also appropriate for use with adults. A method of identification audiometry using a tracking procedure, sometimes called self-recording monitoring audiometry, is also used with adults in military and industrial settings. ASHA considers *Guidelines for Identification Audiometry Using a Threshold Tracking Procedure* deserving of a separate document. When the writing task is undertaken ASHA recommends that representatives of military and industrial groups should be included.

The guidelines are designed for rapid and efficient identification of hearing impairment. A basic assumption behind the guidelines is that identification audiometry is usually conducted in the relatively poor acoustic environments of schools and offices. Consequently, the procedures recommended are designed to be robust enough to be valid in a wide range of test settings. Naturally, it would be desirable for all identification audiometry to be conducted in acoustic environments that are controlled, but such environments are seldom available.

Identification audiometry is only one component of a hearing conservation program. A well-balanced program will include screening, rescreening, threshold audiometry, referrals for audiologic and medical evaluations, education and habilitation planning, and counseling for parents and teachers. Too often the sole goal is referral for medical evaluation rather than referral for consideration of communicative needs of those who fail screening procedures. Once people have been identified by the program, they should be followed regularly to insure that their communication and medical needs are met. It is pointless to identify people who have hearing impairments unless there is a concurrent follow-up program to handle their habilitative, educational, and medical needs.

Finally, these guidelines apply only to the use of pure-tone air-conduction screening for the purpose of identifying persons who have hearing impairment that interferes with or that has the potential for interfering with communication. Research (Eagles, 1981; Eagles, Wishik, and Doerfler, 1967; Roberts, 1972) demonstrates that pure-tone air-conduction screening is inefficient for the purpose of identifying many persons who have conductive ear pathology. Thus, if the purpose of an identification audiometry program is also to identify persons with conductive ear pathology, ASHA suggests the simultaneous use of otologic screenings, or supplemental procedures such as impedance (otoadmittance) measurements or pure-tone bone-conduction measurements. However, ASHA cannot specify any standardized screening procedures that employ impedance or bone-conduction measures because sufficient research data on such procedures are unavailable at the present time.

IDENTIFICATION AUDIOMETRY

The following recommendations emphasize identification audiometry for children using a manually administered, individual, pure-tone air-conduction screening procedure.

Children To Be Screened

Individual limited-frequency screening should be administered annually to children of nursery-school age through grade three and to high-risk children.[2] The time the program saves by emphasizing the lower grades permits appropriate attention for the high-risk group and focuses the program's efforts during the years when identification of communication problems can lead to intervention that will forestall serious educational, psychological, and social problems. Some school systems may elect to screen routinely after grade three at three- or four-year intervals (Darley, 1961). Others may find that a cost vs benefit analysis does not justify routine screening beyond grade three (Downs, Doster, and Wever, 1965). To determine the merit of routine screening after grade three, more data appear to be necessary.

Procedure

Individual Screening. Individual as opposed to group screening is recommended. The Massachusetts Test (Johnston, 1948) is an example of a group pure-tone test that achieved great popularity and is still used in some states. It requires written responses and, consequently, like most group screening tests is limited to children above the second grade. Other limitations of group tests are calibration and maintenance problems of multiple earphones, increased set-up time and excessive time spent in retesting false-positive failures. All of these factors combine to increase the total time required for the screening program without increasing accuracy. Many group tests may appear to save time but the time taken to set up, check calibration, score answer sheets, and retest excessive failures may result in no saving of time.

Manual Method. A manual versus an automatic method is recommended because it is applicable with children down to three years of age. There is no known evidence that a self-recording or other type of automatic method is possible and effective with young children. Certainly, if an effective and more rapid automatic method is developed, its use should be considered.

Signal

Type. Pure-tone signals shall be used. Many different stimuli have been used to screen children and adults for the purpose of identifying persons with hearing impairment. Before audiometers were widely available, phonograph recordings were used to produce repeatable stimuli as in the Western Electric Fading Numbers Test. The Fading Numbers Test had a variety of defects: the most notable was its tendency to pass children with hearing deficits in the range above 500 Hz. Other screening tests that employ speech signals are vulnerable to the same defect.

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[2] Examples of high-risk children are those who: (a) repeat a grade, (b) require special education programs, (c) are new to the school system, (d) were absent during a previously scheduled screening exam, (e) failed a threshold test during the previous year, (f) have speech problems, language problems, or obvious difficulty in communication, (g) are suspected of hearing impairment or have a medical problem associated with hearing impairment (children with recurrent or chronic problems such as allergies may require audiometric monitoring). Additional examples of high-risk children are given in Darley (1961, p. 38)

Test Frequencies. Test frequencies shall be 1000 Hz, 2000 Hz, and 4000 Hz. The Conference on Identification Audiometry (Darley, 1961) recommended the frequencies 1000, 2000, 4000, and 6000 Hz. The recommendation for 500 Hz was ambiguous but the conference's intent appears to have been to eliminate 500 Hz except for very quiet test environments.

Melnick, Eagles, and Levine (1964), in a study which tested the conference's recommendations, used 500 Hz, however, all of their tests were conducted inside double-walled audiometric rooms. Melnick, Eagles, and Levine found that the conference's recommended test was highly efficient except at 6000 Hz, which produces too many failures. The variable interactions between earphones and ears at 6000 Hz (Villchur, 1970) among other considerations, make 6000 Hz a poor choice for inclusion in an identification audiometry program. The use of 500 Hz in order to assuage the user that he will discover all middle ear pathologies in a group of children is contraindicated by the hard data that is available (Eagles, 1961, Eagles, Wishik, and Doerfler, 1967; Roberts, 1972).

When an inordinate number of failures is expected at 4000 Hz, then 3000 Hz at 20 dB HL might be considered as the alternate test signal. There is insufficient research data at the present time to validate that the information obtained warrants the routine inclusion of 3000 Hz.[3]

Screening Levels. Screening levels shall be 20 dB HL (re: ANSI-1969) at 1000 Hz and 2000 Hz and 25 dB HL at 4000 Hz. It is acceptable to screen at 20 dB HL at all three frequencies, but if 4000 Hz is not heard, output should be increased to 25 dB HL. Since most children will hear all three tones at 20 dB, the hearing level dial can remain at one setting for the entire test. It is important to remember, however, that 25 dB is the specified level at 4000 Hz.[4]

Results

Failure Criterion. Failure to respond at the recommended screening levels at any frequency in either ear shall constitute failure.

Mandatory Rescreening. All failures should be rescreened preferably within the same session in which they failed but definitely within one week after the initial screening. Removing and repositioning the phones, accompanied by careful reinstruction, markedly reduces the number of failures. Wilson and Walton (1974) reported a 52% reduction in failures by rescreening. The rescreening, using the same frequencies, levels, and failure criterion, is an essential procedure for improving the efficiency of a screening program.

Disposition of Failures. Failures on rescreening should be referred for audiologic evaluation by an audiologist. Some persons, particularly young children, will fail both the screening and rescreening procedures and then yield normal thresholds on an audiometric evaluation. Therefore, a hearing impairment should not be considered identified until after receiving an audiometric evaluation by an audiologist. An example of a program employing this referral format has been described by Campanelli, Krucoff, and DiLosa (1964). The following referral priority for audiologic evaluation is recommended for those children who fail the screening and rescreening procedures:

a. Binaural loss in both ears at all frequencies
b. Binaural loss at 1000 and 2000 Hz only
c. Binaural loss at 1000 or 2000 Hz only
d. Monaural loss at all frequencies
e. Monaural loss at 1000 and 2000 Hz
f. Binaural or monaural loss at 4000 Hz only.

The constraints placed on individual programs will determine the referral format, but the hearing conservation program supervisor should be responsible for providing case management necessary to guarantee appropriate referral for audiologic and medical consultation. In addition, the supervisor should secure educational assistance, if necessary, for students during and after medical therapy or audiologic habilitation. These duties are emphasized because the primary goal of school hearing conservation programs is to reduce the negative effects of communicative problems that are secondary to hearing loss, rather than simply to identify children who pass or fail a screening test.

PROCEDURAL CONSIDERATIONS

Adherence to the following procedural recommendations should facilitate successful implementation of the ASHA guidelines for identification audiometry.

Personnel

Identification audiometry programs should be conducted or supervised by an audiologist. After appropriate training, support personnel may administer audiometric screenings and rescreenings under the supervision of an audiologist. If properly trained professionals are not involved in supervising an identification audiometry program, an inordinate number of false-positive failures and false-negative passes may occur, thus undermining the validity of the program. Without reservation, the audiologic evaluation should be administered by an audiologist.

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[3] ASHA invites active research on the addition of 3000 Hz to the screening format. Research studies also would be helpful to determine whether 3000 Hz could be substituted for 4000 Hz as a better predictor of subtle communicative problems among school-age children.

[4] ASHA is interested in active research concerning screening levels, since there is a great deal of strong feeling expressed concerning the issue, but very little hard data are available.

Instructions

Instructions are critical in all audiometric procedures but particular care must be taken in instructing children. Instructions should emphasize the importance of responding "right away even when the beeps sound far away." Groups of children can be instructed at one time. Those waiting for the test profit from watching others being tested. Pantomime may have to accompany verbal instructions for the very young child or the difficult-to-test person, particularly if a conditioned play response is required rather than a hand or verbal response. Careful reinstruction is an important part of the rescreening process. Frequently children fail because they have misunderstood instructions. This is particularly true of children in the three- to six-year age range.

Time

At the third-grade level the entire screening, including earphone placement, occupies less than one minute. For younger children more time may be necessary. To avoid unnecessary failures with younger children, it is sometimes desirable to present more than one signal per frequency if there is no response. The net effect is a saving of time because the more careful screening process reduces the number of children who fail and require rescreening.

Acoustic Environment

The acoustic environment is an important variable in screening audiometry. Usually school environments are not too noisy for screening at frequencies above 1000 Hz, but sometimes ambient noise will interfere with screening at 1000 Hz. The 1000-Hz to 4000-Hz range was selected for the ASHA guidelines because it is less vulnerable to invalidation by ambient noise and because most significant hearing impairment will include failure in this range. The allowable ambient noise levels in the region of the test tone are shown in Table 1. Although screening at 500 Hz is not recommended, there is nothing inherently wrong in screening at 500 Hz in an appropriate environment such as a double-wall test room (Melnick, Eagles, and Levine, 1964). If an individual wishes to include 500 Hz, the allowable ambient noise levels are also included in Table 1.

Careful snug placement of the earphones increases attenuation of ambient noise by the earphone-cushion assembly. On the other hand, ASHA does not encourage the use of large sound-attenuating circumaural earphone assemblies (for example, Auraldomes and Otocups). Below 1000 Hz, these devices provide limited improvement in attenuation of ambient noise relative to the attenuation produced by the MX-41/AR cushion (Webster, 1954; Cox, 1955; Benson, 1971). The advantage provided above 1000 Hz is not needed because ambient noise is generally weak above 1000 Hz and the MX-41/AR cushion provides relatively good attenuation of the weak high-frequency ambient noise. Furthermore, the large earphone assemblies are awkward for small children, and they increase test-retest variability in the higher frequencies.

Some persons have mistakenly assumed that sound-attenuating headsets eliminate the need for a quiet test environment, or worse, that they substitute for a sound-isolated audiometric test booth. In extremely noisy environments an audiometric test booth is often the only means of providing an environment quiet enough for screening audiometry. The sound-attenuating headsets provide the least benefit in the frequency range where it is needed most.

Audiometric Equipment and Calibration

Audiometers used for screening purposes shall meet the ANSI S3.6-1969 requirements for either a limited-range or narrow-range audiometer. Audiometers used for audiometric evaluation shall meet the ANSI S3.6-

TABLE 1. Approximate allowable octave band ambient noise levels (SPL re: 20 micropascals for threshold measurements at Zero HL (re: ANSI-1969) and for screening at the ASHA recommended levels (re: ANSI-1969). In test environments that have fluctuating noise levels, caution must be used in applying the maximum value shown in this table. The committee has used the best information available in the literature to support the levels, and is basing its recommendation on these levels until additional information is available.

Test Frequency	*500*	*1000*	*2000*	*4000*
Octave Band Cutoff	*300*	*600*	*1200*	*2400*
*Frequencies **	*600*	*1200*	*2400*	*4800*
Allowable ambient noise for threshold at Zero HL (re: ANSI-1969)*	26	30	38	51
Plus ASHA screening level re: ANSI-1969	20	20	20	25
Resultant maximum ambient noise allowable for ASHA screening	46	50	58	76

* The allowable ambient noise levels for ANSI-1969 Zero HL threshold measurements were calculated by subtracting from the maximum allowable noise levels specified in the ANSI standard (S3.1, 1960) the difference between the ANSI-1951 and ANSI-1969 standards for pure-tone audiometers. In effect, the lower SPLs specified at Zero HL in the 1969 standard require quieter test spaces to measure normal listeners' thresholds.

1969 requirements for a wide-range audiometer. Audiometric calibration to ANSI S3.6-1969 specifications should occur regularly, at least once every year, following the initial determination that the audiometer meets specifications.[5] All of the ANSI specifications should be met, not just sound pressure level. Frequency errors, overshoot, and transient clicks are just a few of the problems that may invalidate a screening test. The sound pressure output of each audiometer should be checked at least every three months (preferably more often) in a 6 cc coupler. In addition, a daily listening check should be performed to determine that the audiometer is grossly in calibration and that no defects exist in major components.

Reports to Parents

Recommendations for audiologic and medical evaluations should be based on local realities. The language used in notices sent to parents about screening or rescreening results should avoid diagnostic conclusions and alarming predictions. Remember that the hearing impairment is not confirmed until the audiometric evaluation is administered. Personal contact would be preferable to sending notices, if possible. Some persons become overly concerned, others express no concern, and still others would like to cooperate but fear the expense that may be involved. If parents believe that their child can "hear," despite what a hearing screening suggests, tact and persuasion will be required to convince them that they may be in error. The word "fail" probably should be avoided in reporting screening results. The reporting aspect of programs for identification audiometry requires more time and thought than some programs have provided in the past.

SUMMARY

ASHA recommends a manually administered, individual, pure-tone, air-conduction screening procedure for accomplishing identification audiometry. The purpose of this procedure is to identify rapidly and effectively those persons with hearing impairment that interferes with communication or that has the potential for interfering with communication. The procedure is designed to be used with children as young as three years old, although it is applicable for use with adults.

The recommended identification audiometry procedure is as follows. Audiometric screening should be at 20 dB HL (re. ANSI-1969) at the frequencies of 1000 Hz and 2000 Hz and 25 dB HL at 4000 Hz. Failure to respond at the screening level at one or more frequencies in either ear is the criterion for failure. An audiometric rescreening should be administered the same day or no later than within one week to all persons failing the initial screening. An audiologist should administer an audiologic evaluation to persons failing the rescreening. If a hearing impairment is identified by audiometric evaluation, referrals should be made to meet the person's habilitative, educational, and medical needs.

Several procedural considerations are vital to implementing successfully the ASHA *Guidelines for Identification Audiometry*. An audiologist should conduct or supervise an identification audiometry program, although nonprofessional support personnel may be used for the screening procedures after appropriate training. Careful instructions are very important, particularly for young children. Ambient noise levels should not exceed 50 dB SPL at 1000 Hz, 58 dB SPL at 2000 Hz, and 76 dB SPL at 4000 Hz using a sound level meter with octave band filters centered on the screening frequencies. Audiometric equipment should initially meet all the ANSI S3.6-1969 specifications and be rechecked at least annually. The sound pressure output at the phones should be checked at least every three months, and listening checks for any gross malfunctions should be made daily. Finally, appropriate reporting of screening results should avoid diagnostic conclusions and encourage further evaluation for persons not passing the screening procedures.

Note: When the following Standards referred to in this document are superseded by an approved revision, the revision shall apply:

(1) American National Standard Specifications for Audiometers S3.6-1969; and

(2) American Standard Criteria for Background Noise in Audiometer Rooms S3.1-1960.

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[5] Studies on audiometer calibration suggest that, upon receipt, most audiometers may never have been in complete calibration (Eagles and Doerfler, 1961; Thomas, et al., 1969; Walton and Williams, 1972). This information underscores the importance of initial calibration of audiometers, and indicates that they should be checked to meet ANSI specifications before they are used in a screening program. It has been shown that when specifications are met initially, the audiometers generally remain stable (Walton and Wilson, 1974).

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ATTACHMENT B

I. Identification Audiometry: Definition, Objectives, and Program Responsibility

Identification audiometry refers to the application of any of a variety of hearing testing procedures to persons of any age for the purpose of identifying those individuals with hearing sensitivity less than that generally defined as within normal limits. Once the identity of these persons has been ascertained, they may be subjected to audiological, otological, medical, psychological, educational, and other scrutiny so that a comprehensive description of their total problem may be derived, a diagnosis made, and a sequence of steps in management prescribed. But the ascertaining step—the original discovery of a hearing impairment which results in the setting apart of an individual as one to be watched or examined further—is denoted by the term *identification audiometry*.

Other terms, some in more common usage, have been applied to this process of identification audiometry (screening, search, assessment, detection, probe, case finding, surveillance). Perhaps no term states the objective quite so well, however, as *identification audiometry*. The most frequently used term, screening audiometry, suggests the use of certain instruments for the testing of designated frequencies at stated intensity levels, but in a comprehensive view of the problem of identification of hearing impairment it is readily apparent that at certain age levels and with certain individuals at all age levels the use of a pure tone audiometer is not feasible. Often, as in industry or the military establishment, limited frequency screening is inadequate and a complete audiogram is necessary if all the purposes of identification audiometry are to be achieved. Identification audiometry is wide enough in scope to encompass any procedure the purpose of which is the identification of a hearing problem. But the term does not refer to *diagnostic* procedures. Identification audiometry is not designed to answer the questions 'How much impairment does the individual have?' 'What type of impairment does he have?' 'What is responsible for the hearing deviation?' or 'Is the problem treatable?'

Nor does identification audiometry include the endeavors on the part of personnel from many disciplines known collectively as the hearing conservation program. Identification audiometry is only one important aspect of a hearing conservation program, that limited part of it planned specifically for the most efficient and the earliest possible detection of those persons whose hearing behavior suggests that they warrant further, more definitive examination. An analogy is that of a microscope with initial minimum magnification selected to view a large area. One then progresses to more and more powerful lenses if more detailed knowledge is needed.

This monograph sets forth the general and specific goals of identification audiometry, suggests procedures to be followed at various age levels, describes optimal conditions for testing, and makes recommendations to individuals charged with responsibility for such testing.[1] As a preamble to these presentations certain assumptions or principles are stated upon which subsequent discussion of methodology stands.

Basic Principles

1. The fundamental concern is the maintenance of an optimal state of health for every individual, his health being defined in the broadest possible way: physical, emotional, social, and mental. Obviously knowledge about the state of an individual's sensorium is crucial, but not simply for its own sake. The implications of a hearing problem must be viewed comprehensively; the specialist in the measurement of hearing loss must continually view his data in perspective and consider the impact of the hearing problem on the subject's welfare—physical, emotional, social, and mental.

A comprehensive program of identification and management includes the following:

a. Prevention—in specific terms (for example, appropriate management of ear infections to prevent hearing loss) and in general terms (for example, public education regarding the causes and significance of hearing loss).

b. Early case finding.

c. Early diagnosis.

d. Early medical treatment.

e. Habilitation and rehabilitation.

2. Hearing loss is no respecter of persons. Consequently programs of identification audiometry need to be established on the broadest possible base to reach the largest possible numbers of people. The study of existing practices shows that from state to state and locality to locality direction of programs varies as do age levels and population segments reached (see Appendix A). Ideally programs of identification audiometry accomplish their purposes best when grounded on what may be called a public health concept, which offers minimal obstacles to total coverage. A program which fails to reach and benefit individuals because they are too young, too old, too poor, in institutions for correction or custodial care, or not in public schools falls short of its ideal achievement.

3. Identification audiometry is not an end in itself. Program personnel who are eternally bent on locating more 'cases' but who fail to provide anything constructive for the ones found have failed to understand the goal of the program. Identification audiometry is only one phase of a much broader hearing conservation program with medical, legal, and rehabilitative aspects. The reader is referred to generally available published materials (*5*, *6*, *7*, *9*, *10*, *11*, *12*, *14*, *15*) which describe in some detail how hearing conservation programs may be established and operated. Brochures describing local policies and practices can be secured from most state Departments of Health or Crippled Children's Services.

The management of hearing disability is fundamentally a health problem, and all hearing conservation programs should have the benefit of consultation from an otologist, with the possibility of surgical or other medical intervention for all patients who need this attention. Because of the equipment and staffing problems of hearing testing, the problems of the differentiation of hearing loss from other disabilities, the complexity of modern rehabilitative procedures, and the necessity for special classroom instruction, various other specialties must be involved. The assistance of special educators, public health and school nurses, psychologists, family counselors, acoustic physicists, audiologists, medical personnel, and others is required as members of a health effort, all focused upon the needs of the individual.

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[1] For definitions of technical terms the reader is referred to glossaries provided by Davis and Silverman (*2*, pp. 553-557), Hirsh (*8*, pp. 334-344), and Watson and Tolan (*15*, pp. 574-580).

A high degree of co-operation and maximal efficiency of communication should characterize the relationships among these professional co-workers. Those who find the cases with actual or suspected hearing impairment and those to whom these persons are referred need to talk readily with each other; they need to understand each other's purposes and procedures. Placing the welfare of the patient uppermost, they must see to it that everyone receives the benefit of available services and that nobody gets lost in a dead end of inaction.

Broadly stated, the goal of any hearing conservation program is to determine debilitating defects as efficiently and economically as possible and to ensure prompt medical attention and the preventive, rehabilitative, and educative steps which are necessary. In this context, the goals of identification audiometry are subgoals; a proper concern for optimal hearing testing alone, as presented in this monograph, should never lead to the neglect of other important phases.

4. Identification audiometry is a compromise with the ideal program of hearing evaluation. The term refers to the screening of large numbers of people in a limited amount of time by personnel who do not have extensive training and experience. For the sake of reaching a large population economically, a degree of accuracy and a large amount of detail are sacrificed. If one demands more complete information and data of unassailable reliability and validity, he must resign himself to test fewer people at greater cost. But if the premium is on fuller coverage of the population, he will adopt certain less detailed procedures in full awareness of their limitations and of the need to supplement his findings through other measures.

The procedures described in this monograph will not lead to the discovery of every child who may at some time in his life have a hearing loss, for it is not proposed that every child shall have frequent otological examinations and threshold audiograms. Hopefully the procedures outlined here will lead to the identification of most persons with a hearing condition for which something can be done medically or educationally.

5. In spite of the fact that programs of identification audiometry have limitations built in, they have purposes which can be attained only as high standards are established and implemented. Effective identification audiometry is not easy to set up nor to run continuously, nor can it be done without budgetary preparation.

The point is not to design a limited program of identification audiometry in order to meet some minimum standard. The idea is to outline procedures which will ensure that the fewest possible individuals are or would be victimized by inadequate programs, from the deaf child who is tragically classed as mentally defective to the adult falsely accused of malingering and the senior citizen unnecessarily denied the pleasures of hearing.

This goal necessarily implies the importance of good equipment, of appropriate testing environments, of suitable training and supervision of personnel, of dissemination of information about the handicap of hearing impairment, of reducing the subjective element in hearing evaluation through the use of standard procedures repeatable from setting to setting, of calibration of equipment and calibration of personnel, so that the often disparate results from some current identification audiometry programs may be replaced with data of useful reliability and validity in the future—data that will be of use in epidemiologic prediction as well as in proper management of the individual.

This proposition involves the profound conviction that because the goals of identification audiometry are vital and the procedures are demonstrably valid, the costs can and will be met.

6. A longitudinal approach to identification audiometry is needed. Although different audiologists may be engrossed with the identification of hearing losses within population subgroups differentiated by age or occupation, all share a common concern for early identification and treatment. The goals of identification audiometry at the preschool, school-age, and adult age levels are hardly unique or mutually exclusive. Many of the hearing problems discovered in adulthood have their origins in childhood and youth. If one is to grapple with hearing problems in a comprehensive way, he must seek solutions at every age level.

The ideal is to conduct a reliable test as early in life as possible, preferably in infancy. Even in the neonate it is possible to check for variations from normal responses and to identify those who can profit from medical attention and reassessment. Following this earliest test, the preschool child should be tested, especially so that language retardation can be prevented where possible and so that significant hearing problems can be discovered.

Even with these earlier tests, the school system will desire information in the kindergarten and first grade about whether each child's hearing acuity will allow him to handle typical school communication or whether special instruction is indicated. The basic audiogram accomplished in kindergarten or first grade will constitute a useful reference so that threshold shifts can be identified in later years. At intervals during the child's school life he should be reexamined to assure the earliest possible treatment and to ensure that no hearing problem, invisible to the otoscope and insidious in onset, may unnecessarily become a handicap.

When the individual enters the labor force, a carefully derived threshold audiogram for reference purposes should be collected for medico-legal reasons. Such a reference audiogram is especially needed in the armed forces. In certain environments which have an adverse effect on hearing occasional monitoring audiometry is advised.

Special problems exist with the institutionalized, as in tuberculosis sanitaria, and with those who have multiple handicaps (such as the cerebral palsied or the partially or totally blind) for whom the audiologist must adapt standard techniques. Much more can be done for the aging population. Hearing conservation here has an especially fruitful and rewarding role, not only in rehabilitation-education but also in instituting effective testing to identify the aged who need special services, medical or otherwise.

The foregoing principles constitute the philosophy upon which programs of identification audiometry are based. The goals of such programs are clear. Some may apply in all programs, whatever the age level or occupational status of the subjects involved, while others pertain to specific groups identified by age level—preschool, school age, and adult.

General Goals

The general goals of programs of identification audiometry include the conservation of human resources, economy, public education and information, adequate programming for future services, and the development of new knowledge through research.

Conservation of Human Resources. Programs of identification audiometry share a basic humanitarian philosophy:

a. The optimal functioning of the individual—physically, intellectually, emotionally, socially, and vocationally.

b. Acceptance of the individual by his peers without damage to his personality.

c. Maximal use of personal skills so that achievement may reasonably match aspiration.

Programs of identification audiometry, then, emphasize the prevention of handicapping conditions, the prevention of educational retardation, and the prevention of emotional disability caused by hearing impairment. But they go a step farther: they concern themselves also with persons not appropriately considered *handicapped.* There are important preventive objectives. They follow the person who has only a slight hearing loss to see if his hearing deteriorates; even though no otoscopic abnormalities are evident and even though the loss of sensitivity constitutes no impairment of hearing for speech, the individual with any decrease in hearing sensitivity should be identified and observed for preventive purposes. These programs also serve the person with unusually acute hearing who with a partial hearing loss may no longer be equipped to do the skilled job he was doing. Every individual's potential is to be considered a precious resource, zealously watched and guarded.

Economy. One goal of identification audiometry is to save money. The importance of this is especially obvious in the industrial or military settings with their mounting compensation claims for hearing impairment. Clearly it behooves a businessman, for example, to identify pre-existing hearing losses in his employees so that upon termination of their employment the business will not be improperly charged for responsibility. Similarly it is a responsibility of an industry or a military service to keep tab on the hearing of its personnel who work in critical noise levels in order to determine the effectiveness of its noise controls and the advisability of job adjustments for those whose hearing appears to be deteriorating.

No less practical in terms of economics is the prevention and early identification of hearing losses in young children. The taxpayer does not pay *the child* who suffers a hearing loss as the employer pays the laborer who is the victim of acoustic trauma—but he pays nevertheless. Facilities for the education and rehabilitation of children with hearing losses who are not properly identified, referred, and treated involve great financial outlay. Money spent for prevention of hearing loss or early treatment of a problem with consequent restoration of normal hearing or significant improvement of hearing is money saved.

Public Education and Information. Ongoing programs of identification audiometry serve to awaken awareness and interest on the part of the citizenry in the prevention and treatment of hearing problems. Parents need to be concerned, as do teachers and school administrators, employers and supervisors. The fact that hearing losses sometimes go unrecognized or misdiagnosed for years suggest that even physicians and nurses may be helped by the reminders provided by good testing programs. An unpublished study[1] of preschool children diagnosed at the New York Hospital as having hearing losses was conducted to determine under what diagnosis the referral of these children was made. In less than 40% of the cases was hearing loss cited as a possibility. At least 60% were referred as mentally defective or aphasic or emotionally disturbed. Such findings suggest that various persons who deal with children on a professional level often lack sophistication concerning the behavioral patterns of young hard-of-hearing children.

Future Programming. A clear goal of any case-finding project is to gather information on the basis of which communities can estimate the nature and extent of their future needs. Thus, programs of identification audiometry can supply the facts to show what personnel, services, and facilities must be mustered. They can spark the imaginative utilization of existing resources and the active development of new resources for the management of those with hearing impairment.

Research. Knowledge concerning why, how often, and in whom hearing impairment occurs, or what can be done about it, is far from complete. But as more and more people engage in the systematic standardized collection of reliable data on the hearing sensitivity of large masses of the population, the answers to certain questions should emerge: 'What prenatal conditions are significantly related to incidence of hearing loss?' 'What diseases tend to cause impaired hearing?' 'How is incidence of hearing loss related to socioeconomic status and other population variables?' 'How can hearing impairment be more reliably detected in babies?' 'Are diagnoses of central deafness in children supported by evidence gathered in follow-up examinations?' 'What happens to hearing during the aging process?' 'How much noise can be tolerated for how long?' 'How can one account for the differential sensitivity of individuals to exposure to noise?' 'How can the efficiency of noise controls be increased?'

There is no end to the questions, but some of these questions have answers obtainable in part through the longitudinal approach of identification audiometry. The data gathered on hearing losses coupled with information from case histories can throw new light on the epidemiology of hearing impairment and help minimize and prevent hearing losses in future generations.

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[1] Reported at the National Conference on Identification Audiometry by Leon I. Charash.

Specific Goals by Age Level

Preschool Children. There are many reasons why it is desirable to test a child's response to sound very early.

It is important, first, to detect every child who gives indication of a developmental retardation. Those who have been engaged in programs of identification audiometry with neonates and young children report that the procedures described in Chapter II lead to the discovery not only of children with hearing problems but also of children with other problems whose early study and differentiation is important in terms of economics and the conservation of human resources: profoundly defective children, cerebral palsied children, and other multi-handicapped children. Early discovery of any physical or intellectual condition that deviates from normal means better management and greater possibilities of correction of the deviation.

Second, the child with even a mild hearing problem will suffer some degree of isolation during crucial developmental stages. Communication skills are developed early. To acquire them the child must hear and understand and cope with what he hears. If he is to be helped to belong and to learn and to develop functional speech and language, his potential handicap must be recognized; he must be helped to compensate for it.

Third, early medical management, enlightened early training by parents in language skills, and placement in an appropriate educational setting (special nursery schools or other facilities where enriched speech stimulation, lipreading instruction, auditory training, and training in the use of hearing aids can be provided) may make it possible for the hearing-impaired child to fit into a regular classroom when he reaches school age. The prevention of educational dislocation is one of the primary goals of identification audiometry at the preschool level.

Fourth, an important legal purpose is served by identification audiometry in the area of child adoption. Social agencies concerned with adoption and child placement need routinely to know as much as possible about all the sensory modalities of each child involved.

Who shall be screened in this program of identification audiometry at the preschool level? Every child should be examined who exhibits in his personal or family history any unusual conditions or untoward incidents. Indications of parental Rh incompatibility; rubella during pregnancy; other maternal rashes and infectious diseases during the first trimester of pregnancy; birth injury; hearing loss in the parents, siblings, and more distant relatives; and obvious multiple handicaps should make a child subject to as early and thorough a test as possible. A study in England[2] of such a population of children belonging to 'high risk' groups indicates that the prevalence of hearing problems may be as high as 15%, from three to five times higher than that found in the general school population.

Unfortunately all conditions predis-

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[2] Reported at the Conference by Aram Glorig.

posing to hearing loss have not yet been identified. Nobody can specify all the predilections and tell precisely where in the population hearing problems are scattered. Therefore the day should come when *every* child between the ages of seven and 15 months will be subjected to appropriate measures for the detection of hearing loss. Arrangements to do this are easier where populations of children are 'captive' as in orphanages, institutions, and hospitals. Complete coverage is more difficult in other segments of the population, but it is not wildly unrealistic to work toward the routine use of methods (see Chapter II) which can be readily applied by pediatricians, general practitioners, and private and public health nurses, as well as by trained audiological personnel in offices and well-baby clinics the country across. Equally important is the development of programs for the testing of children between the ages of two and five. Until these programs are readily available, the public must be alerted so that children who are suspect will be brought by their parents to get a hearing test.

School-Age Children. Medical, social, and educational justifications for identification audiometry loom largest between the ages of five and 16.

The goal is to locate children who have even minimal hearing problems so that they can be referred for medical treatment of any active ear conditions discovered to be present and so that remedial educational procedures can be instituted at the earliest possible date. Programs should be designed to identify not only children with a chronic disability but also children who have difficulty during only certain times of the year or under certain conditions. The period when a child may not be hearing well (as during a respiratory illness or during a season with high pollen-count) and consequently be functioning at a low level may be just the time when social and educational demands on him are great. Such children are among those composing the group of pseudo-mentally retarded.

Classroom teachers and school nurses can be trained to spot the youngster who is failing to fit in and to participate alertly in the classroom; they can learn to suspect that a hearing loss may underlie his apparent slowness or stubbornness. Some children who might endlessly flounder along as 'slow learners' or 'trouble makers,' or ultimately drop out as failures, can be recognized as needing special care within the school system—preferential seating, lipreading, speech correction, or placement in special classes where they can perform at their best.

In the school-age population children in corrective and custodial institutions (homes for the mentally retarded and institutions for orphans and other wards of the state) should have the benefits of hearing testing.

Adults. Some adults constitute 'captive' populations subject to identification audiometry programs.

a. Personnel in the U. S. Armed Forces. The goals of identification audiometry in the military setting have been summarized as follows (*1*):

(1) to select or reject men as a part of the regular physical examination;

(2) to provide information for the otologist concerning the extent and nature, the probable cause, and the progress of individual hearing losses in relation to the disease and to the effectiveness of treatment and preventive measures;

(3) to establish the amount of hearing loss for compensation purposes, including the determination of the original state of hearing before any service-connected or employment-connected hearing loss has developed;
(4) to enable personnel officers to determine whether certain individuals are qualified for certain military specialties that involve special kinds of hearing ability;
(5) to obtain new information as to (a) the causes and the prevention of hearing loss; (b) criteria for hazards to hearing; and (c) the effectiveness of particular tests and instruments for accomplishing the above objectives.

b. Personnel in industrial establishments. In some states the laws dealing with occupational disease and injury include or are interpreted to include impaired hearing caused by working in noisy environments among the conditions to be considered grounds for compensation. One purpose of identification audiometry in industry is to discover hearing losses existing prior to employment so that the industry shall not be required to pay compensation for losses for which it is not responsible. The importance of economic protection of industry should not unduly over-shadow other purposes served by identification audiometry, however; industry seeks to keep its personnel well, whole, happy, and producing. In this connection the ear has in recent years been added to the family of things industry tries to protect. Identification audiometry is the key to this protection.

The function of identification audiometry in both the military and industrial settings might be reviewed as follows.

(1) The preplacement audiogram (sometimes called reference audiogram), preferably a threshold audiogram, determines whether the individual shall be selected for military service or for employment in industry; if his hearing sensitivity falls below the standard set for acceptance, he is excluded.

(2) If he is selected, this audiogram represents information regarding his hearing ability at the point of entering the military service or an industrial plant (or a given job within that plant). One justification for it is medico-legal. Another is its importance with regard to job placement, for some jobs require more sensitive hearing than others.

(3) Subsequently the goal of monitoring audiometry can be combined with identification audiometry in that periodical hearing assessment, perhaps less stringent than the initial test, provides information about job adequacy. It tells whether the person still retains his ability to perform the job, whether any hearing loss has occurred, and whether any such loss is progressive. It leads to appropriate medical management of any problem discovered. It helps to determine whether a man should be temporarily withdrawn from a particular job environment or whether noise controls in that job should be restudied and made more effective. It suggests the need for 'preventive maintenance'—accepting counseling and getting started on lipreading or the use of amplification, once it is known that deterioration of hearing which cannot be prevented has begun.

(4) The final stage in the monitoring is the terminal audiogram at the time of departure from the service or plant or job. This audiogram may provide the basis for special compensation and is therefore important. Special care is warranted in all such hearing evaluations, for when hearing loss becomes associated with a profit motive, an in-

dividual's behavior during hearing testing sometimes changes. Identification of the person with a nonorganic problem is important in both the military and industry.

And what of the rest of the people? What of those who leave the military after a few months or years of service—and those in industry who change to jobs where identification audiometry is not a standard routine—and those who never have worn nor will wear a uniform or enter an industrial plant? In the light of the first two general goals listed above it follows that ideally everyone should have the benefit of identification audiometry and the services to which detection of hearing impairment leads. Because of their role as breadwinners men need hearing testing as a group more than women, especially since the incidence of hearing loss is reportedly higher in males than in females (*3, 4*). Farmers who drive tractors, other nonindustrial workers who operate noisy machinery, persons who use firearms—all these are 'special risk' personnel with regard to hearing loss and should be screened periodically. Inmates of prisons and other corrective and custodial institutions may have hearing losses; some research indicates a higher than average incidence in such populations (*13*). The ultimate rehabilitation of these persons should include attention to any hearing problem that might have contributed to anti-social behavior. Middle-aged and elderly people may avoid years of empty isolation or relative deprivation through the benefit of such resources as community- or state-sponsored hearing-testing units.

Hearing needs are *individual* needs and those needs must be found and met where they are. It is to be hoped that the near future will see audiograms as readily obtained as tuberculin tests and chest x rays.

Responsibility for Programming

Whose responsibility shall it be to make the attainment of these goals a reality? Obviously in the armed forces the particular service of the Department of Defense—Army, Navy, Air Force—has responsibility for the detection of hearing loss in its own personnel. And in industry individual companies provide their own programs of identification audiometry; increasingly, however, it may be noted, they are consulting state and local departments of health in setting up their programs.

The responsibility for determining whether infants up to two months of age are responsive to auditory stimuli does not appear to belong to any particular organization. Whoever provides medical care for the child should assume the responsibility. In many cases this person will be a pediatrician, in others a general practitioner in private practice or serving in a well-baby clinic. In some areas registered nurses will bear the responsibility. Whoever is seeing the child can be trained to observe startle reactions in order to detect profound insensitivity. With children seven months of age and older eye movements, general orientation toward the test sounds, or other orienting responses are readily available; the services of a trained observer will be necessary in some general service setting under medical supervision.

Between the ages of 2½ and four years, all but the most seriously involved children will respond with the use of speech signals in identification audiometry. By four to five years of age, children can be tested with reasonable reliability in the same ways as school-age children. Who can best administer identification audiometry programs for these preschool and school-age children? It is strongly recommended that state and local departments of health carry this responsibility. This recommendation is made in full cognizance of the fact that in many states and localities departments of education or public instruction are presently assigned this responsibility by law (see Appendix A). Although a uniform pattern of health department responsibility is not immediately possible throughout the country, such a thing is a desirable goal for a least two reasons:

a. More complete coverage of the preschool and school-age population. Children in parochial and private schools, a group composing between 30% and 40% of the total population of children, would not be excluded from the program as is often presently true when programs are the responsibility of a department of public instruction.

b. More effective liaison between the administrators of the identification audiometry program and medical personnel involved in follow-up. A more comprehensive and smoothly-running hearing conservation program can result.

When programs of identification audiometry for the general adult population (other than those covered by programs in the armed forces and industry) are considered, once again departments of health appear to be the logical responsibile agents. The services offered to school-age persons can be extended to all citizens; potentially all persons can be reached in much the same way that they are reached in current identification programs conducted in the areas of tuberculosis, cancer, and heart disease.

Until such time as practices are uniform with regard to department of health sponsorship, it needs to be emphasized that co-operation between educational personnel and health personnel is absolutely essential in the administration of identification audiometry programs. Regardless of who holds the *legal* responsibility, all personnel share responsibility for providing maximally efficient service to the largest possible number of people.

Summary

Identification audiometry refers to the application of hearing testing procedures leading to the original discovery of a hearing impairment. These procedures result in setting apart an individual as one to be watched or examined further. Among the general goals which programs of identification audiometry seek to attain are the conservation of human resources, economy, public education and information, adequate programming for future services, and research. The fundamental concern of such programs is the maintenance of an optimal state of health for every individual.

Programs of identification audiometry are designed to serve large numbers of people with reasonable accuracy at the least possible cost. They are not an end in themselves but constitute one phase of broad programs of hearing conservation designed to meet the needs of individuals with hearing loss. Programs of identification audiometry require careful planning and administration with adequate budgetary support. To be effective, they should serve the individual in a continuing and periodic way from infancy through adulthood.

Those responsible for the medical care of neonates should be responsible for applying procedures to them which will identify possible hearing loss. Local and state departments of health should be responsible for identification audiometry programs for preschool children, school-age children, and the general population of adults. Identification audiometry programs in industry and the military, with their special purposes, should be the responsibility of the individual companies and the particular branch of military service.

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ATTACHMENT C

II. Identification Audiometry for Preschool Children

Procedures

The methodology of hearing testing of preschool children may well be treated in three parts according to age level: the neonate (birth to age two months), the infant (between the ages of seven and 24 months), and the young child (aged two to five years).

The Neonate. In the testing of a child from birth until approximately two months of age use can be made of the startle response (Moro reflex). In a baby with good hearing and an intact central nervous system any sudden moderately loud sound will bring about a widespread response: the ongoing muscular activity is inhibited, the hands are pronated, the eyelids blink, etc. These startle responses are so uncomplicated, relatively speaking, that they may be easily observed.

The general procedure is simply to create a sudden noise by almost any means at a time when the infant is quiet. Perhaps the best time is when he has just fallen into a light sleep; his response to the noise will consist of awakening, crying, and gross body movements. Hardy, Dougherty, and Hardy (*8*) have reported that the most consistently effective stimulus is the presentation of a very short percussive peak of noise of 55 or 60 db intensity produced by a 'clacker.' The response of the child to an initial presentation of such a noise is extremely important because his adaptation is very rapid. The examiner may choose therefore to vary the stimulus, using whistles, clickers, bells, and other noisemakers of different pitches, varying also the intensity of the stimulus and the distance from the ear. A delay between successive stimuli up to as much as one minute may be indicated. In general, every effort should be made to see that the infant is ready for each successive stimulation.

The observation of the infant's response with a startle reflex must be made with care for much of a waking infant's ongoing activity may closely resemble the startle reflex. Examiners have sometimes found it useful to test two babies together, the child in question and a control child, the children being observed and compared simultaneously. Stimuli other than auditory may be used to determine the child's general level of reaction. For example, a child's reaction to light stimuli may indicate that his observed reduced reaction to auditory stimuli is attributable to general lethargy rather than to a specific hearing problem. The independent judgment of a second observer is also helpful in reducing the biases of the experimenter.

Study of infants indicates that in a surprising number the Moro reflex disappears by four months of age. Although it is true that certain aspects of the Moro reflex such as the eyeblink can be observed in persons of any age in response to a loud auditory stimulus, the more obvious details of the startle response apparently disappear early. This is one aspect of adaptation, or accustomedness. Accordingly, the use of a startle response as an identification audiometric technique with infants is recommended only up to two months of age.

Considerable research is yet needed to determine the best procedures to use in testing the neonate and in interpreting the results obtained. It is important to remember that at this age one is not 'testing hearing' (the neonate has not yet learned how to hear), but, rather, his *responses to sounds* of known frequency and intensity. Nevertheless it is to be hoped that testing hearing by observing the startle pattern of large numbers of neonates may become general practice. As experience and knowledge accumulate, procedures can be refined.

The Infant from Seven to 24 Months. With babies ranging in age from seven to 24 months procedures are most useful which involve what have been called distraction responses. One recommended procedure is the use of the Ewing techniques (*5, 6*). These involve the presentation of acoustic stimuli which are intrinsically interesting to the child such as the noise created by a spoon stirred in a cup or the crinkling of tissue paper. By the time he is about seven months of age the infant should have learned how to hear and how to relate himself consistently to minimal acoustic stimuli. The child with normal hearing should be expected to turn his head toward interesting sounds.

Techniques for administering such tests have been described by the Ewings (*5, 6*) and by Hardy, Dougherty, and Hardy (*8*). A film produced at the Johns Hopkins University[1] demonstrates techniques which may be followed.

Gross tests of the localization of sound by the infant can be given to the infant from seven to 24 months of age. For example, one procedure[2] involves the placement of a loud speaker in each of the four corners of a large sound-treated room. The child to be tested is placed in the middle of the room and sounds are presented at random from the various speakers. The observer notes the effort of the child to localize the sound by turning his head or his eyes. Even severely physically handicapped children can be tested by such a procedure. Refinements of localization may involve the use of earphones with the presentation of the sound first in one ear and then in the other, the observer noting the child's glance to the appropriate side. One procedure (*10*) uses a stereophonic sound pickup and two earphones; a phantom sound is made to move around the head, constituting a stimulus to which eyeball rotation and head movements are the universal response in very young children who have normal hearing.

Some feel that widespread screening of children by these techniques, or modifications of them, between the ages of seven and 24 months is feasible and is to be desired in preference to mass screening of neonates. Others prefer mass screening of neonates with testing between the ages of seven and 24 months to be confined to children known to fall in a high risk group for hearing defects and to children who show evidence of speech and language retardation. These points of view rather more express a difference in emphasis than a difference of opinion. Screening of both neonates and infants is desirable and practical. Observation of responses of neonates is much less refined; when a neonate does not respond according to expectations, he is simply tabbed for further observation of development. When the infant, seven months or older, does not respond appropriately, he is referred immediately for refined clinical assessment.

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[1] Available from the Bureau of Preventive Medicine, Maryland State Department of Health, Baltimore.

[2] Described at the Conference by Louis M. DiCarlo.

Children from Two to Five Years of Age. A great variety of procedures is available for the testing of children between the ages of two and five years. These techniques are listed and described by Newby (*12*), Davis and Silverman (*3*), and Boies *et al.* (*2*). Only a few of the more commonly used procedures are referred to here.

In this age group a surprising percentage of children can be tested with conventional pure tone audiometric techniques. With patience and expenditure of considerably more time than with older children audiologists can often do both air conduction and bone conduction audiometry. These procedures should be tried wherever possible because of their high yield of detailed functional information.

It must be emphasized, however, that all these procedures for very young children, including pure tone audiometry, have been developed for use in a clinical setting by expert audiologists. It has been made clear in this discussion that, in general, the first stage of identification audiometry is not carried out by expert audiologists. Without doubt, both validity and reliability are seriously affected by the exigencies of widespread testing. For the three-year-old, familiar sounds, particularly controlled speech associated with picture identification or object recognition, offer a much more useful screening device. As the child matures, more careful distinctions of auditory sensitivity can be employed. There is a tendency to lump two-year-olds and four-year-olds together, without recognition of the great differences in their behavior.

A commonly used adaptation of pure tone audiometric techniques is known as play audiometry. Here the child is taught to make a motor response such as dropping a marble in a box, placing a ring on a peg, inserting a block in a hole, or hitting a ball with a hammer, when he hears the stimulus tone. The use of such procedures has been demonstrated in the film *Too Young to Say* (*16*) produced by the John Tracy Clinic. Play audiometry has been found successful with children as young as two years of age who present a loss of sensitivity.

Several tests are available which make use of the technique of presenting familiar sounds for identification. Other techniques involve an appraisal of the child's response to speech. A game can be played in which the examiner states, 'I am going to say some words. You say the same words to me.' Or the child may be asked to follow instructions and point to or manipulate pictures, objects, or body parts.

A variety of electrophysiological procedures has been developed and are described in the literature (*1*, *4*, 7, *9*, *11*, *13*, *14*, *15*, *17*). Such procedures are more useful in diagnostic audiometry, however, than in programs of identification audiometry.

Responsibility

The pediatrician is the key figure in the assessment of hearing in the neonate. Ideally this type of appraisal should be incorporated into the pediatrician's initial examination of the infant's reflexes. The pediatrician, or in other cases the general practitioner who examines the child in the hospital nursery, is able to consider the infant's response to sound in the perspective of the child's total reactions to stimuli. An alternative procedure is for a hospital audiologist or otologist to appraise the infant's response to sound as manifested by the startle pattern. Another alternative is to use the hospital or public health nurse who has had inservice training and workshop experience in the recommended procedures and possesses some fundamental knowledge of the nature of acoustic stimuli.

Similarly, pediatricians, otologists, or audiologists, as well as nurses who have particular training in the techniques already described, are competent to identify those children in the age range from seven to 24 months who may have hearing problems. The sound localization procedures for children from seven to 24 months of age and the procedures appropriate for the testing of children from two to five years of age should be carried out by a trained audiologist. Not only should he have technical qualifications but he should be competent to work well with children.

Whether the testing of children from two to five years of age is done by personnel in state health departments or in departments of public instruction, it is important that school administrators and educational personnel should have as much information as possible about the hearing impairment or suspected hearing impairment of children at the time they first enter school.

Summary

It is recommended that use be made of startle responses in testing children from birth to approximately two months of age. Tests using distraction responses and gross tests of the localization of sound by the infant can be used with children aged seven to 24 months. A variety of procedures, including conventional pure tone audiometric techniques, are available for testing children between two and five years of age.

The pediatrician, the general practitioner, a hospital audiologist or otologist, or a hospital or public health nurse may be responsible for screening hearing in infants from birth to 24 months of age. Training materials are available pertaining to techniques which may be used. Programs for testing preschool children from two to five years of age may be set up by public agencies such as health departments. Such programs should be under the administration of a trained audiologist.

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Attachment D

III. Identification Audiometry for School-Age Children: Basic Procedures

General Test Methodology

Identification audiometry in the school-age population is best described in two stages. The first has traditionally been called screening audiometry. It involves the testing in an abbreviated way of large numbers of children resulting in the ready identification of those who have no hearing problems and the tentative identification of those who may have hearing problems. The second stage involves a test of minimal hearing sensitivity; this is a more detailed test by more highly trained personnel with more elaborate equipment. Its purpose is to lead to the final identification of those who should be referred to an otologist, or other physician, for a complete diagnostic work-up.

The first stage of the procedure involves either individual or group limited-frequency testing. Procedural details are presented in this chapter and the next. Only pure tone audiometric procedures are considered. It is strongly recommended that individual pure tone testing be planned for all grade levels whenever possible. Many experts believe that periodic screening on an individual basis is better than an annual screening using group procedures. However, if a choice must be made between group pure tone audiometry or none, group procedures are possible at least at third grade level and above.

Local considerations having to do with scope of the total program, the ages of the children to be tested, and the amount of time and money available for the program may make it necessary to resort to group methods (*4, 8, 13*). Data from several state programs indicate that group testing is considerably less expensive than an individual screening program: for example, in one state costs for individual pure tone screening run between 25 and 35 cents per capita, whereas group pure tone screening procedures involve a cost of between 15 and 17 cents per child.[1] Figures from the Michigan Hearing Conservation Program indicate that relatively untrained technicians can do accurately between 70 and 80 individual sweep check hearing tests per day; through the use of group pure tone screening procedures between 200 and 250 pupils can be tested per day with comparable accuracy when an adequately quiet testing environment can be achieved. In a community where group hearing testing equipment can be left in one room, the procedure would involve considerable economy. However, where this is not possible, the time spent in setting up and servicing the equipment would no doubt reduce the amount of saving involved in group testing procedures. Group procedures requiring paper and pencil responses can be employed satisfactorily only with children in the third grade and above. Younger children cannot be relied on to make appropriate responses to this kind of test.

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[1] These data from an unpublished time-cost study conducted by the Hearing Conservation Section, Michigan Department of Health, were reported at the Conference by Courtney D. Osborn.

Descriptions of appropriate group testing procedures can be found in standard textbooks. Group procedures using fading numbers are not recommended. Criteria for failure which are presented at the end of this chapter may be applied to group as well as individual techniques using pure tones. Where group procedures are used, the equipment should be carefully calibrated and checked regularly and the results of its use validated against the results of individual hearing testing so that administrators may be sure that the program is functioning with acceptable efficiency.

In the second stage of the process, the threshold test, standardized procedures should be followed. Descriptions of these procedures can be found in standard textbooks (*5*, *12*).

It is possible that in the future some of the automatic audiometric techniques mentioned in Chapter V may be adapted for use with school-age children. Administrators of hearing conservation programs may well want to investigate developing automatic audiometric procedures and the variations of use to which they may be put.

Environment

It is useless to carry out the recommended identification audiometric procedures unless the results obtained can be assumed to be valid. Their reliability depends upon three important aspects: the environment in which the testing is done, the equipment used, and the personnel operating the equipment. If there is a breakdown anywhere, the results of the program become meaningless.

A good acoustic environment is necessary. It can safely be said that millions of dollars and thousands of man hours are now being spent on worthless programs simply because space has been utilized because of its convenience rather than because of its suitability for the purpose. If an examiner is screening at 15 db above audiometric zero while the environment induces 20 db of masking, spuriously large numbers of subjects will be identified as having hearing problems and will be referred on to successive stages of the program. Initial expenditure of money for a suitable testing environment results in substantial savings of money spent for the referral of children erroneously thought to have hearing impairment.

The amount of space to be planned for hearing testing will depend upon whether the first stage makes use of group audiometric techniques or whether both stages involve individual testing. Regardless of the type of test used, the testing environment must be one in which valid measurement can be obtained. This requirement necessitates the use of acoustic treatment in all enclosures used for testing.

In existing school buildings appropriate space may conceivably be found and adapted for this use. Past experience suggests that this possibility is often unlikely. Useful space should be located as far away as possible from heating and other mechanical equipment, the school shop, the music room, the typing room, the cafeteria, rest rooms, and other sections where student traffic and regularly scheduled activities can be expected to induce high masking levels. In planning to adapt already existing space or in planning space designed for hearing testing in new construction, administrators will find it advisable to make sound level and spectral analyses in order to determine whether the rooms meet the specifications established by the American Standards Association.[2]

They may also secure the services of acoustical consultants available in nearby universities or industrial establishments. Cox (*2*) has recently defined the minimal noise levels allowable for testing various frequencies at given intensity levels. It is earnestly to be hoped that school boards will come to see the need for specifying the inclusion in each new school building of space planned for the efficient implementation of hearing conservation programs. It is also to be hoped that architects who plan the space will give due consideration to the problems involved.

It is likely that the program will demand sound treatment beyond what the usual existing school can provide or what local carpenters can well construct. It is, therefore, strongly recommended that in schools which cannot provide adequately quiet quarters, sound-treated prefabricated booths be purchased and installed. A portable booth which can be conveniently dismantled and set up again is not recommended, as the best of these portable structures achieves only from 20 to 25 db of attenuation in the frequencies tested. A standard sound-treated booth made by a commercial manufacturer which can guarantee at least 40 db attenuation is recommended. Such booths are available at a cost of between $1200 and $1500. School boards may find it less expensive to procure mobile testing units—specially constructed buses or trailers—that provide the necessary sound isolation to guarantee reliable test results. Such units are useful, too, for covering large areas of sparse population. In the larger mobile units, group as well as individual testing can be performed.

Only through planning a program in accordance with such stringent criteria for test environment can those responsible for the program be sure that they are measuring the hearing levels of the children and not just the background noise of the school. The required outlay of funds is reasonable and essential. Schools which lack appropriately designed space will find a kind of precedent set by industry. It is an impressive fact that upon the insistence of noise engineers and audiologic and otologic consultants to industry, over 1,000 prefabricated sound-treated booths have now been installed in industrial situations in the United States.

A supervising audiologist will want to make frequent check of the number of individuals identified because of failure in the low frequencies tested. If he finds an inordinate number of failures at 500 cps or below, in cases where normal hearing is found in the higher frequencies, he will know that the screening level he has adopted is inappropriate for use in all frequencies in the testing environment he has.

Frequencies to be Tested

Since a complete threshold test of every child at all frequencies may not be feasible, a selection of certain frequencies must be arrived at through some process of compromise. Certain factors which enter into the making of this compromise must be carefully weighed. These include the time devoted to the initial screening, the time required in the retesting of children who fail to meet the criteria of the initial screening, the realities of the acoustic conditions of the testing environment, and the reliability of instrumentation in the testing of certain frequencies.

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[2] ASA Standard S3. 1-1960, American Standard Criteria for Background Noise in Audiometer Rooms.

At present, definitive data are not available which would make a decision about the frequencies to be tested clear-cut. Data do not exist which incontrovertibly indicate that the extremes of the frequency spectrum should be included, for example, 125 cps and 8000 cps. Similarly there is a lack of incontrovertible evidence that limited frequency testing using only one or two frequencies will result in the identification of an acceptable percentage of hearing losses in a school-age population.

In the absence of these definitive data, it is recommended that no less than four, preferably five, frequencies be tested. *The frequencies recommended for identification audiometry at the school-age level are 500, 1000, 2000, 4000, and 6000 cps.*

There are several reasons why elimination of the lower frequencies is recommended. It is generally agreed that useful clinical information is seldom gained by testing at 125 and 250 cps. It is difficult in most testing environments adequately to combat interfering environmental noise in testing these frequencies.

Some audiologists recommend not including 500 cps in the screening of school-age children. In many testing environments there is considerable masking at 500 cps. There is some evidence to indicate that even under excellent testing conditions the use of 500 cps does not necessarily improve the effectiveness of the screening if 1000 cps is used. A study conducted in one state indicated that when 500 cps was used in the initial screening, almost one-fourth of the total failures on the screening test were due to failures to reach the criterion level on 500 cps only. It was found that if this frequency were eliminated, only 2.2% of the medically significant hearing losses confirmed by detailed testing in otological clinics would have been missed; thus 97.8% of the medically significant losses would have been identified without testing at 500 cps.[3] On the basis of the economic considerations indicated by such information some programs may very well prefer to omit 500 cps, in this way probably reducing the number of children referred for threshold testing and thus permitting personnel to devote more time to the initial screening of larger numbers of children.

On the other hand, when the hearing testing environment can be made to meet the criteria set forth herein, as can usually be done, it is highly desirable to test at 500 cps. The purpose is to identify as many children with hearing problems as possible, and certain published information (*3, 9*) supports the view that 500 cps *may* be a critical frequency in identification audiometry for school-age children.

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[3] Data taken from unpublished study by Evan Lounsbury, Regional Audiologist, Hearing Conservation Section, Michigan Department of Health. Reported at the Conference by Courtney D. Osborn.

There is no general agreement about which of the higher frequencies should be included in a screening test. There is fairly good agreement that reliable testing at 8000 cps is difficult. It is felt that no audiometer presently available can consistently hold ASA standards at 8000 cps. The response of earphones frequently begins to fall off sharply at 8000 cps and an audiometer is easily put out of calibration at that frequency. The Armed Forces-National Research Council Committee on Hearing and Bio-Acoustics (CHABA) (*14*) has recommended that 8000 cps not be used in identification audiometry.

The inclusion of 4000 and 6000 cps for identification purposes has been widely debated. Some feel that the identification program should be concerned primarily with medically reversible conductive-type hearing losses; therefore testing of the higher frequencies is advised against. Others feel that high frequency hearing losses should be discovered in the initial screening if possible.

It is known that a substantial part of the population demonstrates a dip at 4000 cps. In some cases this dip can be related to environmental noise, for example, the noise of tractors which farm children may drive.[4] Apparently in some individuals the presence of a 4000-cycle dip has little significance, and when serial audiometry is done, no change in the amount of loss is found over a period of years. Since such large numbers of children are found with a 4000-cycle dip, many otologists have indicated that they prefer not to have referred to them children with a loss at only that frequency. Many audiologists feel that it is important to test at both 4000 and 6000 cps; if hearing is normal at 6000 cps, one can dismiss a dip at 4000 cps as of minor significance. However, if a loss is found at 6000 as well as at 4000 cps, there is evidence of a more pervasive involvement and the child should be referred for threshold testing and possibly for an otological examination. In line with this reasoning, some audiologists prefer to screen only at 6000 cps and not at 4000 cps.

It may be restated that no valid data exist supporting the use of a sweep-check hearing test at all frequencies; nor are there adequate data available yet to support limited frequency audiometry using only one or two frequencies (*6*). In programs of preventive medicine, however, if one too early strips his data-gathering down to the minimum, he will fail to answer all of the pressing questions about hearing loss. The procedure of choice, then, is to test more frequencies rather than fewer frequencies until such time as definitive data are available justifying the use of only one or two frequencies.

Intensity Levels and Criteria for Failure

Current practices with regard to the use of given intensity levels are based upon recommendations made by the American Academy of Ophthalmology and Otolaryngology in 1943 (7). These recommendations were apparently based on clinical practice and not upon some statistical determination of what would constitute the best screening level and the most appropriate criteria for failure.

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[4] A study in progress, 'Incidence of 4000 cps binaural losses in school children,' is a research project of the Division of Special Education, Iowa Department of Public Instruction, supported by Research Grant #B-1970 (A), S.D.(A), National Institute of Neurological Diseases and Blindness.

In the discussion that follows it is to be remembered that a two-step audiometric procedure is undertaken prior to referral of a child to an otologist. The first step is a four- or five-frequency screening test. (Some audiologists may prefer to insert an immediate re-screening step following this in case of a child's failure to meet the criteria.) The second step consists of a threshold test involving all frequencies. *The criteria for failure apply to both steps.* The first test is designed to yield a considerably larger number of cases than are found in the second step to have a significant hearing loss. The second step is designed to identify those children most appropriately referred to an otologist for a diagnostic examination. The interposition of the second step is designed to prevent unnecessary referral.

Current criteria for referral (*12*, p. 210) specify failure at two of the frequencies tested at a sensation level of 20 db or failure at one frequency tested at a level of 30 db. A 15 db sensation level has been adopted as the screening level for identification audiometry almost uniformly across the country. The historical basis for this choice is that 15 db is a level about two standard deviations above the mean threshold of individuals with normal hearing. A second justification for the use of this level is that disability in understanding speech in some situations begins at about 15 db above audiometric zero.

It is now recommended that practice be altered as follows: *only four frequencies shall be considered in the criteria for referral: 1000, 2000, 4000, and 6000 cps. It is recommended that screening be done at the 10 db level* with reference to the present American Standard audiometric zero *for the frequencies of 1000, 2000, and 6000 cps, and at the 20 db level for the frequency of 4000 cps.* A child would be judged to have failed the screening test and to be a candidate for referral for the next step if he failed to hear the 10 db level at either 1000, 2000 or 6000 cps, or if he failed to hear the 4000-cycle tone at the 20 db sensation level in either ear. It is to be remembered that if screening is done at 15 db, a person who has a 15 db hearing loss is passed. The use of 10 db as the screening level at 1000, 2000, and 6000 cps results in the clear labeling of the person who has a 15 db hearing loss as warranting further attention.

Choice of Equipment

Noisy environments can lead to the spurious identification of individuals as having hearing losses. The audiometers themselves may also be responsible for the erroneous identification of apparent losses. To many users of audiometric equipment the instruments are very impressive and seem to imply high reliability. In actuality, many audiometers are relatively unstable and much care must be exerted in their selection and maintenance.

The audiometer to be used in the first stage of identification audiometry should meet the requirements established by the American Standards Association for limited frequency audiometers.[5] This equipment allows for the testing by air conduction of five or six frequencies with an output up to 70 or 80 db. It need not provide for masking or for bone-conduction testing. (See also *11.*) The audiometer to be used in the second stage for the obtaining of the threshold audiogram should meet the requirements established by the American Standards Association (*1*) for diagnostic audiometers. (See also *10.*) Such audiometers can, of course, also be used in the first stage of screening.

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[5] ASA Standard Z24.12-1952: American Standard Specification for Pure-Tone Audiometers for Screening Purposes.

The purchaser of a new audiometer should request that the manufacturer supply data corresponding to the specifications established by the American Standards Association. The purchaser of audiometric equipment for school testing purposes should be aware of the fact that audiometers are generally most efficient in the measurement of hearing loss of a considerable degree. It is technically easier to make the attenuation linear at levels above audiometric zero than it is at or near audiometric zero. Whereas the otologist will more usually be concerned with measurements in the 40 to 70 db range, personnel working with school-age children will be more concerned with the linearity of audiometers at levels near audiometric zero where measurements of children with normal or near normal hearing are made.

The equipment purchased for individual audiometry should include head sets with two earphones so as to reduce the masking effect of ambient noise. When group testing equipment is purchased, it should provide up to 40 pairs of phones in head sets with cushions. Only one phone of each set need be live, but there should be provision for covering the ear not under test.

Attention should be given to the size of the earphones used with individual children. Especially with the school-age group heads and ears vary greatly in shape and size, and some obtained differences in hearing may be attributed to differences in the fit of earphones. Headbands should provide pressure adequate to hold cushions tightly against the head; headbands providing more degrees of freedom in all directions are to be preferred.

Purchasers of equipment for testing school-age children will be interested in following the progress made in the development of supra-aural muffs; some muffs that have been developed promise to provide an economical answer to problems of masking in environments not specifically planned for hearing testing. It is to be hoped that such muffs will be standard equipment on audiometers in the near future; also desirable is a universal type of cushion appropriate for both children and adults or separate cushions for different age groups tested in the identification audiometry program.

Purchasers of equipment will also be interested in the simplicity of design of the equipment (the types of circuits involved, the number of tubes, etc.), the smoothness of function of the controls, the durability of the chassis, and the convenience of placement of the dials and control levers. Audiometers of desired ruggedness and stability with a variety of special features are available but obviously at greater cost to the consumer. Suffice it to say that the inexpensive audiometer ordinarily purchased for use in the testing of school-age children may well be relatively unstable and requires the constant vigilance of the user if valid results are to be obtained from it.

Maintenance of Equipment

The person in charge of the hearing testing program should have a clearly stated policy of what the individual audiometrist is expected to do with regard to maintenance of the equipment and what he is expected not to do. The audiometrist who daily operates the equipment should be responsible for testing of tubes; the replacement of earphone cords, fuses, and line cords; and the biological calibration of the audiometer daily to detect any marked shift at given frequencies. He should periodically listen to each phone to be sure that it is operating and to determine whether increasing the intensity 5 db results in corresponding changes in loudness. The audiometrist, who knows his own audiogram, should check his hearing daily and at least bi-weekly check the audiometer with a group of individuals not noise-exposed and known to have normal hearing. Personnel should be warned against soldering joints and replacing the earphones from one audiometer with those from another.

Beyond this first-echelon maintenance, it will be helpful to have some kind of independent evaluating agency available to users of audiometers for consultation on calibration procedures. If local demands are great enough, calibration check centers should be established by departments of health to serve programs within states or within still larger regions. Several new devices are being developed which will be useful for checking the calibration of earphones in the field without returning them to the factory. The critical point in calibration of audiometers is the intensity output at various frequencies. Four companies now offer calibration equipment which can be purchased for use in a regional or state calibration center. Such equipment can be used to determine whether an individual audiometer needs to be returned to the factory and can also be used to check on the adequacy of factory calibration.

In the absence of such an evaluating agency a supervising audiologist would be responsible for making the next level check, to determine whether an audiometer needs a factory overhaul. It is strongly recommended that an audiometer should be returned to the factory (or factory-designated regional center) for calibration check, re-calibration, and any necessary repair after every four months of use or, if this is not possible, after six months of use, and in any case no less frequently than once each calendar year.

Summary

Identification audiometry for school-age children consists of mass screening of large numbers followed by a test of hearing sensitivity for those suspected of having hearing problems. Mass screening may be done by individual or group screening methods. Individual screening is more accurate but more costly.

Quiet environment is essential for reliable hearing testing. Testing rooms should be acoustically treated. It is recommended that schools purchase commercial sound-treated booths, which are available at reasonable cost.

The frequencies recommended for

identification audiometry at the school-age level are 500, 1000, 2000, 4000, and 6000 cps. It is recommended that screening be done at the 10 db level (with reference to the present American Standard audiometric zero) for the frequencies of 500, 1000, 2000, and 6000 cps and at the 20 db level for the frequency of 4000 cps. It is recommended that the criteria for failure be failure to respond to the 10 db level at 1000, 2000, or 6000 cps or to the 20 db level at 4000 cps.

Equipment should meet the requirements established by the American Standards Association for limited frequency and diagnostic audiometers. Equipment should be properly calibrated and maintained. Independent regional calibration check centers should be established where needed by departments of health. Calibration checks of audiometers should be made after each four months of use and in no case less frequently than once a year.

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Attachment E

IV. Identification Audiometry for School-Age Children: Implementing the Program

Periodicity of Testing

Practices and philosophies vary with regard to the frequency with which hearing tests should be administered to children in the school-age group. Some audiologists feel that the ideal program involves testing every child every year. Because of the fact that such a practice involves large numbers of people and the outlay of large amounts of money, many kinds of compromises have been suggested. Perhaps the most reasonable compromise is dictated by two considerations: (1) detection of hearing loss is particularly important in the younger part of the school-age population; if a child fails an early screening test, there is reasonable probability that he will fail subsequent tests; (2) some children constitute special referrals for hearing testing outside of the routine periodicity of tests.

In newly-established programs an effort should be made to test all of the children during the first school year. Thereafter an adequate program includes aggressive attention to the possibility of hearing problems in the early years in school. This can be implemented by *annual testing in kindergarten and grades 1, 2, and 3. Less frequent testing can be planned in subsequent school years, but no child should experience more than a three-year interval between tests from grades 4 through 12.*

Some programs prefer to operate a screening program in such a way that children will be tested once every two years, for example, in grades 1, 3, and 5, or 2, 4, and 6, plus one test at high school level. More important than to schedule hearing testing in certain grades every year is to insure that no child fails to have his hearing tested at least every two or three years. Accounting, then, should be *by child* rather than *by grade.*

Extension of periodical hearing testing into the high school age is recommended. Because of the tendency for otosclerosis to appear late in school-age, it is important that high school students be tested in grade 10, 11, or 12.

The time of year at which the identification audiometric program is conducted should be selected with care. Clinical findings indicate that there are important differences between the results of tests given at different times of the year. Some have suggested that hearing testing should be done in the 'worst' season of the year with regard to hearing conditions. There are perhaps two seasons of the year when the prevalence of hearing problems increases significantly: the so-called 'cold' season in mid-winter, extending through January and February, and the allergy season, the time and duration of which will vary in different parts of the country. There are always difficulties in designing a program which identifies the maximal number of problems during both seasons. Ideally a child should not have his hearing tested at the same season on successive hearing tests.

The most reasonable compromise would seem to be to test hearing as early in the school year as possible. The supervisor of the program must exercise judgment in deciding how best to use the personnel available to him. He may choose to consolidate his hearing testing personnel and have them move as a group into a school to accomplish the complete routine hearing testing in the briefest possible time, moving on successively to other schools, and thus accomplish the total identification program within a matter of weeks or months rather than stretch it out over the entire year.

In addition to the routine periodicity discussed above, an adequate program should include opportunity for immediate testing of the following types of children (*1*):

(1) All pupils who are new to the individual school or to the school district.

(2) Pupils discovered by previous tests to have a hearing impairment.

(3) Children with delayed or defective speech.

(4) Pupils returning to school after a serious illness.

(5) Pupils enrolled in adjustment or remedial classes or programs.

(6) Pupils who appear to be retarded.

(7) Pupils having emotional or behavior problems.

(8) Pupils referred by the classroom teacher for hearing testing for any reason.

Records

Records of hearing testing through the school-age years should be made a part of the child's general health record. Space should be provided for recording information from a series of audiograms over the school years, with the dates of the tests, the recommendations, and the follow-up.

Such records should be kept as long as is reasonable. Some school systems, having limited storage space, keep the records no longer than they are required to keep them, usually three years after the child's graduation from school. When records are maintained by state health departments, the period is often three years beyond the limit of children's programs, which typically deal with individuals up to age 21.

Medical personnel, vocational rehabilitation personnel, and personnel in military service and industry who have access to records of hearing testing done during the school-age years would find these helpful as reference audiograms in relationship to subsequent hearing tests. School or health agencies can turn such records over to the families of the children involved, particularly if they suggest that the child had had some history of hearing loss.

It seems obvious that if current hearing test records are to be maximally useful, they should be available to medical and educational personnel as well as to parents. They should be used in the planning of educational programs as well as in programs of health. The school and public health nurse, physicians, and school and community speech clinicians should all have the opportunity to scrutinize these records in connection with their various programs.

Personnel

Identification audiometry with school-age children usually requires personnel at two levels, supervisory and technical. A supervising audiologist should hold the certificate in hearing of the American Speech and Hearing Association or at least meet the academic and practicum requirements for that certificate. He has responsibility for selecting the most appropriate procedures for testing the particular population to be studied; selecting, training, and supervising audiometrists; referring certain children for more complex audiological study; supervising equipment calibration; discussing test results with otologists; educating various segments of the public in acceptance of the program of identification audiometry; following up on referrals; and in general carrying out the entire subprogram of identification audiometry.

At the second level are audiometrists capable of performing both individual and group screening tests and individual threshold tests. If possible these audiometrists should have at least one college-level course in audiometry, including supervised practice in testing. More detailed academic training than this is certainly desirable but in some cases even less training may have to be accepted if enough personnel are to be available to man a program.

Prescribed training might well consist of a short course lasting from two to six weeks: approximately one-half of the time would be devoted to basic information about hearing and hearing impairment and the instrumentation used in hearing testing; the other half would be devoted to supervised practice in testing. Such an intensive course would give relatively little attention to the neurology and physiology of hearing, to testing by bone conduction, and to the use of speech audiometry, GSR audiometry, and tests for malingering and psychogenic deafness. Trainees would practice using the audiometer on many individuals with different hearing characteristics, all under close supervision. Such short courses may be offered in universities and colleges or by the staffs of state departments of health.

Short courses of the type described have been successfully used in military service (for example, U. S. Navy, six weeks, 108 hours; Walter Reed Hospital, two weeks, 80 hours) and elsewhere (Michigan Department of Health, six weeks, 180 hours). The whole question of training programs for persons of limited responsibility has for some years been under consideration by the American Speech and Hearing Association. Guidelines regarding the scope of such courses have recently been published (*2*). There is agreement that it is desirable that the course be presented over a period of several weeks, as opposed to a concentrated two- or three-day institute.

How many audiometrists will be needed to implement a program for testing school-age children? One state department of health has found that an audiometrist handling the first two stages of the program and using a combination of group and individual testing can reasonably test a school population of between 10,000 and 12,000 children per school year. If the program requires a test only every other year rather than every year, the audiometrist can handle a population of about 24,000.[1]

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[1] Data reported by Courtney D. Osborn.

A similar program in another state has reported comparable figures, an audiometrist serving between 12,000 and 15,000 children per school year, the exact number depending upon the distance covered by the audiometrist and the amount of travel involved.[2] In a third state reimbursement regulations recently drafted prescribe that an audiologist shall serve a population of from 12,000 to 13,000. The audiometrist in this program is envisioned as serving a population of 4,000 children, but his work is described as only part-time work in the first and second stages of testing.[3]

There is some difference of opinion about the type of personnel who should be selected for work as audiometrists. Their job, involving as it does frequent repetition of certain basic operations, does not allow for much creativity. Individuals with substantial training in audiology may find such employment unattractive for an extended period. On the other hand, if progress is to be made in hearing conservation programs around the country and if usable research data are to emerge from these programs, close attention must be given to the competence of those doing the work. Only an adequately trained person knows the implications of being careless.

Speech clinicians and registered nurses may, when they have had appropriate training, be competent to handle the first-stage screening and the second-stage threshold examination. But if they are used for these purposes, the skills which they were primarily trained to employ will be wasted. As a matter of economy, then, people other than nursing and speech correction personnel are customarily selected to handle the first two stages.

Volunteer personnel (housewives, retired school teachers) who are intelligent, highly motivated to do this sort of service, tactful, insightful in observing children's behavior, and capable of working easily with children as well as amenable to the suggestions of the supervisor, may be selected and trained. If such selection is done with discretion, problems of frequent turnover of personnel may be obviated. Where such persons are employed, administrative procedures should be set up and maintained to see that they are prevented from making evaluations and decisions which they are not competent to make; they should be prevented from doing more than first- and second-stage hearing testing.

The success of the entire hearing conservation program rests upon the validity of the hearing measurement done in the first two stages, and this validity rests importantly upon the competence of the personnel doing the testing. Efforts should continually be made, then, to help them maintain high standards of performance and to provide expert supervision to insure the validity of their results.

Referral Procedures

It is difficult to discuss the procedures of identification audiometry without making some reference to the steps which must follow. It has been stated that the program of hearing testing should provide for adequate medical consultation. Certainly the final steps in the appraisal and management of individuals identified as probably having hearing impairment should be in the hands of medical personnel most competent to give the children the care they need. An otological examination of such children is not just a desirable feature which hopefully can be arranged but is a requirement if the program is to be effective.

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[2] Reported by George J. Leshin.

[3] Reported by Dale S. Bingham.

The procedures adopted in order to accomplish this goal vary from locality to locality. In some communities the results of the two-stage identification process are studied by an audiologist in the central municipal or county or state administrative headquarters of the hearing conservation program. In some programs he alone does not make the decision about subsequent referrals but makes it together with an otological consultant. Such joint professional review of each case is particularly desirable since it permits a careful weighing of all previous data about the child's hearing together with pertinent information from the case history. As a result of this third step, a decision is finally made that a given child should have a comprehensive evaluation of his hearing, comprising a diagnostic audiological workup and an otological examination.

Some programs have developed a plan, approved by local or regional medical groups, to make such referrals directly to otologists. In other programs procedures involve an initial referral to the child's family physician, who may accept responsibility for the care of the child if he feels himself competent to do so or who may, in turn, refer the child to an ear, nose, and throat specialist. Throughout the country hearing conservation programs are increasingly endeavoring to communicate to pediatricians and general practitioners the urgency of the problems involved. Moreover, some programs have made excellent use of public health or school nurses to help parents understand the reason for the referrals that are made and to help them make and keep appointments for further audiological and otological examinations.

In every hearing conservation program problems inevitably arise concerning the number of referrals for medical examination created by identification audiometry. Efforts should obviously be made to avoid referring for complete audiological and otological workups large numbers of children who turn out to have no medically or educationally significant hearing loss. *Educators and physicans alike, however, agree that as a matter of general principle it is better to err on the side of over-referral than it is to take a chance with under-referral and thus neglect to secure necessary medical treatment for children who need it.* Cooperation among educational, audiological, and medical personnel in organizing and implementing hearing conservation programs is necessary in creating an understanding of the intent of the total program and of the possibility that occasionally children will be referred who are found to possess no significant hearing problem.

When it has been determined that a child has a significant hearing loss as a result of the sequence of referrals described above and when necessary medical and surgical treatment and followup have been provided, there is one further important step to be taken. The audiological and medical findings of the otologist must be conveyed to the parents and to other persons who are particularly concerned with the management of the child. The special education supervisor, the speech clinician, and the classroom teacher must be apprised of the child's needs and encouraged to meet them as comprehensively as possible. Appropriate entry should be made in the child's school health record so that a continuing program of care can be insured.

Program Evaluation

Administrators of programs of identification audiometry will naturally be concerned as to whether the expenditure in terms of personnel, time, and money is warranted and whether the program is yielding the desired results. Only by constant scrutiny of the results of ongoing programs can weaknesses to perceived, corrective steps be taken, and maximal usefulness be derived.

One way in which such a continuing evaluation can be made is by a comparison of the results emerging from the various stages of the process. Several steps are involved: first a validation of the first screening test by comparison of it with the results of the second-stage threshold examination; a further validation of the results of the first two stages is provided in the third-stage processing of the results by a professionally capable person in the field of audiology, ideally together with a professionally capable person in the field of otology, who can state on what basis they made a decision for further referral or not; a third validation is provided by the final clinical report made by the otologist who accomplishes the comprehensive otological examination. Careful analysis of the information yielded by this succession of tests indicates whether an efficient program of preventive medicine is being carried out.

There is another kind of evaluation which the administrator may want to make. The total number of audiograms produced in either the first or the second stage or both can be translated into a distribution of hearing losses. If the distribution deviates substantially from the distribution that one expects for a normal population, the administrator will be interested in examining into the testing environment, the calibration of audiometers, and the procedures used by individual testers.

Summary

In newly-established programs all children should be tested during the first school year. Thereafter children should be tested annually in kindergarten and grades 1, 2, and 3. Less frequent testing can be planned in subsequent school years, but no child should have more than a three-year interval between tests from grades 4 through 12. Provision should be made for immediate testing of new pupils, pupils returning to school after a serious illness, those presenting special adjustment problems, and those referred by teachers specifically for hearing testing.

Records of hearing testing should be made a part of the child's general health record and made available to medical and educational personnel responsible for the child's welfare. Such records should be turned over to the child or his family upon his graduation from school.

Supervisors of identification audiometry programs should be trained audiologists holding the certificate in hearing of the American Speech and Hearing Association. Audiometrists administering screening and threshold tests should have training and supervised practicum in these procedures. A minimum training program is suggested.

All testing procedures should be followed by medical, audiological, and educational evaluation so that each child's needs may be identified and steps taken to meet these needs.

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Attachment F

Hearing Levels in Children and Implications for Identification Audiometry

Since October, 1956, the American Academy of Ophthalmology and Otolaryngology, through its Subcommittee on Hearing in Children of the Committee on Conservation of Hearing, has been concerned with a long-term nationwide study of hearing problems in children. An initial study is being conducted in Pittsburgh, through the cooperation of the Subcommittee with the Maternal and Child Health Section of the University of Pittsburgh's Graduate School of Public Health, to evaluate methods for the testing of hearing in children in order to decide which methods are more efficient and economical in terms of time and manpower; to evaluate and define medical signs and symptoms which may indicate danger of hearing impairment; and to consider the psychological, social, and other effects of such impairment. A significant outcome of this study will be the development of the methods and techniques for the Subcommittee's national studies.

Subjects

The study in Pittsburgh, which is planned for a five-year period, is being conducted on a population of approximately 5000 children ranging in age from 3 to 15 years. The school-aged children form 97.5% of the enrollment of the four elementary schools in which the study is being conducted. These schools were chosen to be representative, as a group, of the general Pittsburgh public school population. Preschool-aged children are those who will eventually attend the four schools.

Individual air-conduction hearing thresholds are being determined and otological examinations made on the children at varying intervals. Medical histories are being obtained. The relationships among otological findings, medical histories, air conduction hearing thresholds, and academic achievement and other aspects of child development are being studied.

This paper presents preliminary findings dealing with hearing levels found in the study and some of the factors which influenced these levels. The implications of these findings with respect to identification audiometry will be discussed.

The definition of an otologically 'normal' child used is a child who,

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within seven days of a reliable hearing level determination, was examined by one of three study otolaryngologists at the school test site and reported not to exhibit any of the following physical signs in either ear:

a. congenital malformation of the pinna, auditory canal, or tympanic membrane;

b. operative scar, adenopathy, or fistula in the auricular region;

c. occlusion of the auditory canal resulting in less than satisfactory visibility of the tympanic membrane;

d. abnormal coloration, increased vascularization, bulging, retraction, scarring, impaired mobility, or perforation of the tympanic membrane;

e. calcium plaques on the tympanic membrane;

f. discharge from the middle ear;

g. cholesteatoma; or

h. tumor of the middle ear.

Of the 3019 children who had concurrent otolaryngological examinations and a reliable hearing level determination during the first study year, 2175 were judged to be otologically normal, 457 were found with physical abnormalities of the ear, and 387 had occlusion of one or both auditory canals by cerumen. The term 'reliable,' used in respect to hearing level determinations, means 'repeatable.'

With respect to the group with abnormal otological findings, no attempt was made at this time to fit the children into diagnostic categories. These children include those with both active and inactive pathological conditions. It was found that the following physical abnormalities are associated with higher or less sensitive hearing levels:

a. abnormal coloration, increased vascularization, bulging, retraction, scarring, impaired mobility, and perforation of the tympanic membrane;

b. calcium plaques on the tympanic membrane; and

c. discharge from the middle ear.

The differences in mean hearing levels of children with and without these individual abnormalities differ somewhat with the particular finding but generally speaking range between four and 15 db.

It should be noted that the children with abnormal physical findings were in regular attendance at school at the time physical examinations were made.

The children classed as 'normal' otologically are fairly evenly distributed by age and sex between five and 14 years of age and were examined between June 1, 1958, and June 30, 1959. Children were examined throughout this period, including those seasons when respiratory infections become epidemic and those in which allergic conditions are more common. All children were untrained, but cooperative, listeners.

The numbers of children aged three and four years who were examined during the above period were small because work was concentrated on the school-aged study population. Several hundred children aged three and four years were added to the study and examined in July and August, 1959, following the period for which data are being presented. Reliable hearing level determinations have been obtained on over 96% of children tested of all ages, including those in the three- and four-year-old groups.

Testing Procedures

Hearing levels were determined in specially constructed audiometric test rooms placed in quiet locations in the four schools cooperating in the study. These rooms provided sufficient attenuation of ambient noise, as shown by acoustic surveys, to allow hearing level determinations to be made without masking at the low levels at which many children hear.

Commercial audiometers were modified to allow testing with linearity to a level of at least 30 db below the American Standard audiometric zero and were equipped with Western Electric 705A earphones. Audiometers were calibrated first at weekly and later at monthly intervals and were kept within the American Standard Specification at all times while in use. Necessary corrections were made for the following factors: the variation in sound pressure output from audiometer to audiometer within allowable limits, deviations in attenuator linearity at various intensity levels, and a statistical adjustment to allow for the distribution of thresholds within the 5 db attenuator steps. The statistical adjustment was made because hearing levels are determined in relatively gross 5 db steps. Thus, an individual who hears a particular frequency at 10 db and who does not hear at 5 db is recorded as having a

TABLE 1. Mean and median hearing levels and standard deviations for children in otologically normal and abnormal populations tested between June, 1958, and June, 1959, each frequency by ear. Hearing levels are given in db re audiometric zero, American Standard.

Frequency (cps)	*Right Ear*							
	Number Tested		*Mean Hearing Level*		*Median Hearing Level*		*Standard Deviation*	
	Normal	*Abnormal*	*Normal*	*Abnormal*	*Normal*	*Abnormal*	*Normal*	*Abnormal*
250	2029	412	—9.8	—5.2	—10.6	—6.9	7.7	12.2
500	2175	457	—7.2	—2.2	—7.4	—4.5	7.6	12.3
1000	2175	457	—5.3	—0.3	—5.8	—2.7	7.6	12.7
2000	2174	456	—4.4	—0.1	—4.7	—2.9	8.0	13.0
4000	2026	411	—3.6	+2.3	—4.1	—1.4	9.2	15.2
6000	2040	420	—1.8	+4.4	—3.0	+0.7	10.1	15.5
8000	2017	407	—3.0	+3.4	—3.9	0.0	11.0	17.8
Frequency (cps)	*Left Ear*							
	Number Tested		*Mean Hearing Level*		*Median Hearing Level*		*Standard Deviation*	
	Normal	*Abnormal*	*Normal*	*Abnormal*	*Normal*	*Abnormal*	*Normal*	*Abnormal*
250	2029	413	—10.6	—6.8	—11.1	—8.9	7.1	10.7
500	2175	457	—7.4	—3.0	—7.8	—4.8	7.3	11.4
1000	2175	457	—5.2	—0.2	—5.6	—2.8	7.4	12.7
2000	2173	456	—4.5	—0.7	—4.8	—2.8	8.2	12.6
4000	2026	410	—3.1	+1.2	—3.7	—2.2	9.1	14.0
6000	2040	419	—1.4	+3.7	—2.4	+0.7	10.3	15.7
8000	2018	406	—3.0	+3.0	—3.8	—0.5	11.1	16.7

threshold of 10 db, but he may actually be able to hear at the 6, 7, 8, or 9 db level. If it is assumed that of all individuals with hearing levels recorded as 10 db, an equal number begin to hear at each point between 5 and 10 db, then the whole group, although recorded as having a hearing level of 10 db, actually has an average hearing level of 7.5 db. Thus the hearing levels, as determined in 5 db steps, may underestimate the hearing levels for the group by 2.5 db. Because of this, it was felt that the hearing levels could be made more exact, although still approximate, by subtracting 2.5 db from each hearing level determination.

The data presented are available in sound pressure levels but, for the purposes of this publication it seems logical to present the data relative to the currently employed American Standard audiometric zero.

Results

The mean and median hearing levels and the standard deviations for the groups of otologically normal and abnormal children are shown in Table 1. The mean hearing levels in the abnormal group are higher, or less sensitive, than those in the normal group, the differences varying by frequency and ranging from 4 to 6 db. The median hearing levels also range from 4 to 6 db. The median hearing levels are also higher in the abnormal group than in normal children, but the differences in this instance range from 2 to 4 db.

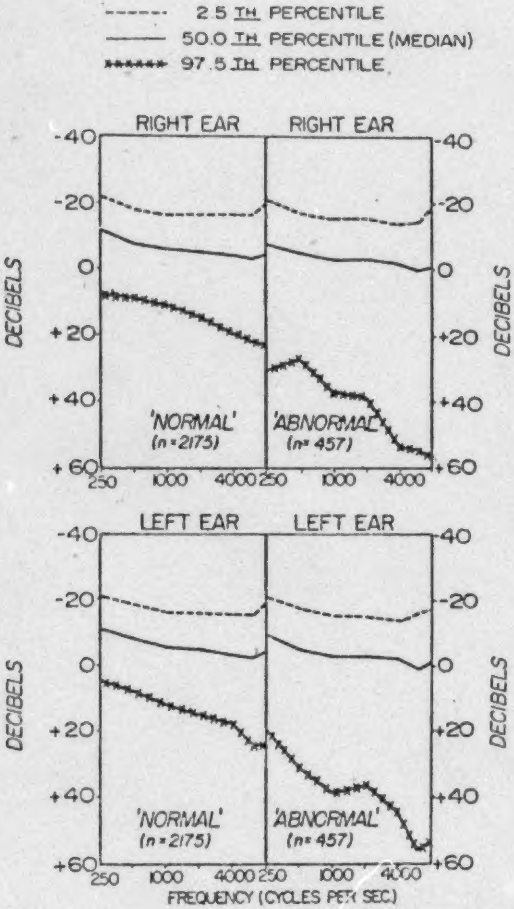
The greater differences between the means of the two groups of children as compared to the smaller differences between the medians is due to the fact that the numbers of children with more extreme degrees of less sensitive hearing influence the means more than the medians. The fact that both mean and median values for the otologically abnormal group are higher or less sensitive than the otologically normal is due to the larger number of children with less sensitive hearing in the abnormal group.

The standard deviations of both groups of children become larger as the frequencies increase. It is felt that this increase is due to the greater variability of response to pure tones at the higher frequencies.

The wider ranges of hearing levels in the otologically abnormal children are reflected in the larger standard deviations for this group. The ranges of hearing levels by ear and frequency, for both normal and abnormal groups of children, are represented graphically in Figure 1 as selected percentiles of the distribution of hearing levels about the medians.

The details of the percentage distribution at various hearing levels for the normal children are shown in Table 2. Similar information appears in Table 3 for children with otological abnormalities. In the normal population 92% of children have hearing levels below audiometric zero at 250 cps. This percentage falls progressively as frequencies increase, until at 8000 cps 65% of the normal children have hearing levels below audiometric zero. In the abnormal children 80% have hearing levels below the American Standard audiometric zero at 250 cps. This percentage also decreases as frequencies increase until at 8000 cps approximately 50% have hearing levels below, or more sensitive than, audiometric zero.

It is of interest that the percentage



NOTE: Between the 2.5 th percentile (upper line) and the 975 th percentile (lower line) are included 95 percent of the hearing levels of the children tested.

Figure 1. Selected percentiles of the distribution of hearing levels of children in otologically normal and abnormal populations by frequency and ear. Hearing levels are given in db re audiometric zero, American Standard.

TABLE 2. Distribution of hearing levels of children in an otologically normal population tested between June, 1958, and June, 1959. Hearing levels are given in db re audiometric zero, American Standard. Values indicate percentages of total number of ears tested falling at each hearing level. R = Right, L = Left.

Hearing Level	250 cps		500 cps		1000 cps		2000 cps		4000 cps		6000 cps		8000 cps	
	R	L	R	L	R	L	R	L	R	L	R	L	R	L
	N = 2029		N = 2175		N = 2175		N = 2174	N = 2173	N = 2026		N = 2040		N = 2017	N = 2018
—35 to —31													•	
—30 to —26	0.3	0.3	•	•						•	•	0.1	0.3	•
—25 to —21	4.4	3.4	1.1	1.1	0.4	0.1	0.3	0.4	0.7	0.4	0.2	0.3	1.8	1.9
—20 to —16	18.0	18.8	8.0	8.0	4.2	3.9	3.5	3.8	3.2	2.5	3.1	2.7	5.8	6.8
—15 to —11	33.3	34.4	28.1	26.8	17.7	18.1	16.0	16.6	14.3	14.0	10.8	10.6	14.5	16.9
—10 to —6	22.5	22.8	26.3	28.7	36.3	33.9	28.0	25.5	25.3	24.3	20.3	18.9	21.8	19.6
—5 to —1	13.3	14.0	24.6	21.9	23.1	24.8	28.9	29.9	28.4	27.9	28.6	27.2	20.6	19.6
0 to +4	4.5	3.2	6.5	8.2	11.3	11.2	13.6	13.0	14.6	15.8	15.9	18.2	16.1	15.1
+5 to +9	1.6	1.6	3.3	3.6	3.8	4.6	5.6	6.4	6.9	8.3	11.6	12.0	8.4	9.3
+10 to +14	1.1	0.8	0.8	0.6	1.6	1.4	1.6	1.7	2.7	3.1	4.4	4.4	4.5	5.2
+15 to +19	0.3	0.1	0.4	0.4	0.4	1.0	1.0	1.4	1.2	1.4	1.9	2.6	2.8	1.9
+20 to +24	0.2	0.1	0.1	0.1	0.3	0.4	0.4	0.6	1.1	0.7	1.0	0.6	1.1	1.1
+25 to +29	•	0.1	0.1	0.1	0.1	0.2	0.6	0.2	0.4	0.4	0.5	0.6	0.7	0.6
+30 to +34	0.1		0.2	0.1	0.3	•	0.1	0.1	0.3	0.3	0.4	0.4	0.3	0.4
+35 to +39	•	0.1		•	0.1	0.2		0.1	0.1	0.1	0.1	0.1	0.2	0.5
+40 to +44		•	0.1	•	•	•	•	0.1	0.1	0.2	0.1	0.3	0.2	0.2
+45 to +49							0.1	0.1	0.3	•	0.3	0.4	0.3	0.2
+50 to +54	0.1	0.1		0.1	•	•	•	•	•	0.1	0.2	0.1	0.2	0.1
+55 to +59	•			•	•	•	•	•		0.1	0.1	0.1	0.1	
+60 or More			•											
No Response (+65)	•		0.1		0.1		0.1	•	0.1	•	0.2	0.2	0.1	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

•Less than 0.1 per cent

TABLE 3. Distribution of hearing levels of children in an otologically abnormal population tested between June, 1958, and June, 1959. Hearing levels are given in db re audiometric zero, American Standard. Values indicate percentages of total number of ears tested falling at each hearing level. R = Right, L = Left.

Hearing Level	*250 cps*		*500 cps*		*1000 cps*		*2000 cps*		*4000 cps*		*6000 cps*		*8000 cps*	
	R	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*	*R*	*L*
	N = 412	*N = 413*	*N = 457*	*N = 413*	*N = 457*		*N = 456*		*N = 411*	*N = 410*	*N = 420*	*N = 419*	*N = 407*	*N = 406*
—35 to —31														
—30 to —26	0.2												0.5	
—25 to —21	2.2	1.2	0.6	1.2				0.2	0.2	0.2		0.5	0.7	1.0
—20 to —16	10.9	14.0	4.6	14.0	3.3	2.8	2.4	2.9	1.4	1.0	1.2	2.4	4.4	4.9
—15 to —11	25.8	26.7	16.2	26.7	10.3	8.8	11.2	11.0	7.5	9.8	6.4	6.7	12.1	11.6
—10 to —6	23.3	24.2	24.3	24.2	28.4	27.1	19.1	18.2	21.2	20.5	13.3	14.8	14.5	15.5
—5 to —1	16.5	15.3	24.8	15.3	21.9	26.3	28.5	31.4	24.3	24.1	23.1	21.7	17.9	20.0
0 to +4	7.3	6.8	11.4	6.8	15.8	13.6	17.3	15.1	14.1	17.6	20.5	17.2	13.5	14.5
+5 to +9	6.6	6.8	8.1	6.8	6.8	7.6	7.9	9.2	14.1	10.7	12.4	13.6	10.8	8.9
+10 to +14	2.4	1.7	4.2	1.7	6.1	5.3	5.5	4.4	4.4	6.1	7.4	8.1	7.4	7.4
+15 to +19	1.3	1.0	1.3	1.0	0.9	2.0	1.8	2.6	3.2	1.5	3.3	4.1	3.9	3.4
+20 to +24	1.0		1.8		1.8	1.3	2.0	1.5	1.9	2.4	3.8	1.7	3.9	3.4
+25 to +29		0.7	0.6	0.7	1.3	1.5	0.9	0.4	1.0	0.7	1.2	2.4	1.7	2.7
+30 to +34	0.7	0.5	0.2	0.5	0.4	0.9	0.4	0.2	1.2	0.7	0.5	1.4	1.7	0.5
+35 to +39	0.2	0.2	0.2	0.2	0.9	0.4	0.9	0.9	1.2	1.0	2.4	1.0	1.2	0.7
+40 to +44	0.2	0.2		0.2	0.2	0.6	0.2		0.7	1.2	1.0	0.7	0.5	1.0
+45 to +49		0.2	0.2	0.2	0.2	0.2		0.4	0.5	0.5	0.2	0.5	1.0	0.7
+50 to +54	0.5	0.2	0.4	0.2	0.4	0.6	0.2		0.5	0.5	1.2	0.5	1.0	1.7
+55 to +59	0.2	0.2		0.2	0.4		0.6	0.4	0.7	0.5	0.5	1.4	0.7	0.5
+60 or More								0.2						
No Response (+65)	0.7		1.1		0.9	0.9	1.1	0.9	1.7	1.0	1.7	1.4	2.5	1.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

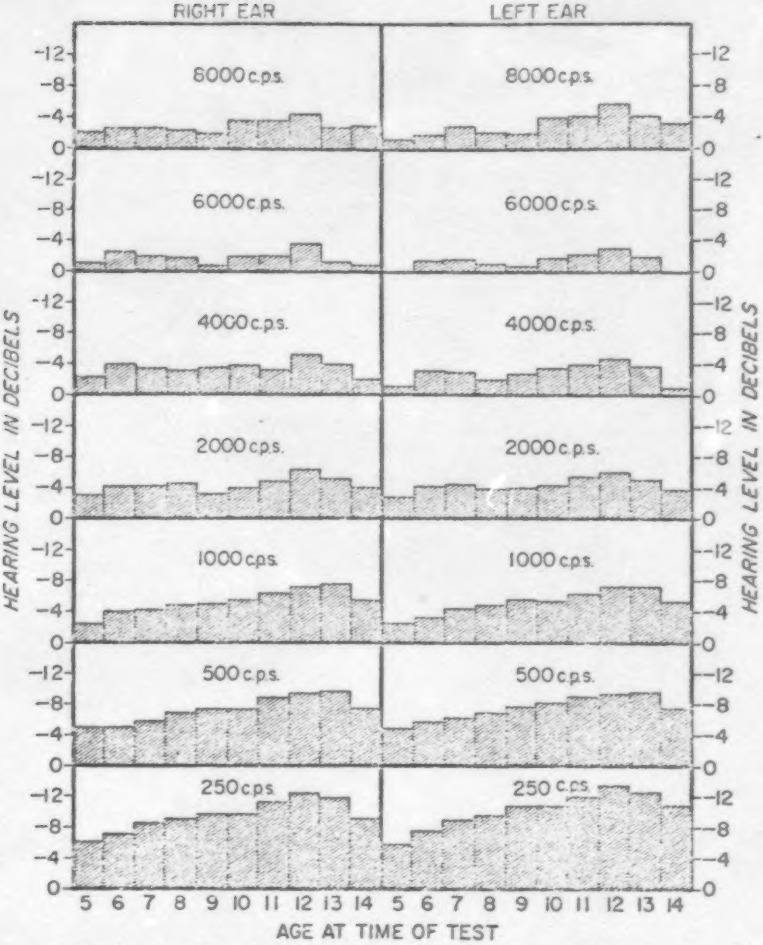


FIGURE 2. Mean hearing levels of 2175 children aged five to 14 years in an otologically normal population by frequency and ear. Hearing levels are given in db re audiometric zero, American Standard.

of children with otological abnormalities who have hearing levels less sensitive, or higher, than 15 db above audiometric zero is approximately 4% at 250 cps. This percentage increases to 18% at 8000 cps. No more than 10% of the children with otological abnormalities had hearing levels less sensitive than 15 db above audiometric zero in the speech range.

The distribution of hearing levels by age in the otologically normal children is illustrated in Figure 2. This distribution shows a trend of increasing sensitivity from five years of age to the greatest hearing sensitivity in children who were 12 and 13 years at the time their hearing level was determined, followed by a decrease in sensitivity at ages 14 and 15. The reasons for this trend are not fully understood at this stage of the analysis of the data and will be sought as the study progresses. It has been suggested, however, that part of the increased sensitivity with age may be explained on the basis of the behavior of the child. Another suggestion has been that at low frequencies, where this trend is most marked, the fit of the earphone is critical and that in younger children earphone leaks may be greater due to the shape of their skulls. It is felt, however, that the earphone leak is only roughly correlated to head size. No explanation is offered at this time for the drop in sensitivity following the peak at ages 12 and 13.

When the hearing levels in the otologically normal group are distributed by sex, it is found that at 11 and 12 years of age females show more sensitive hearing levels at all frequencies than males and, in the groups younger than these, the levels are similar for both sexes. Females show their most sensitive hearing levels at 12 years of age while males show peak sensitivity later, at age 13.

As stated previously, the data presented in this paper are preliminary findings. The analysis of data is proceeding and will be reported elsewhere. Certain additional findings, however, may be described briefly. For example, those children who have had two reliable hearing level determinations have significantly lower hearing levels on the second test. No significant differences in hearing levels are found between right and left ears on a group basis. The differences between hearing levels of white and non-white children do not appear to be significant. Mean hearing levels show variation by month, being somewhat higher in those months in which respiratory infection and allergic reactions are more common.

Discussion

At the time of their hearing level determinations and otoscopic examinations the study children were in attendance at school and functioning as children without known illness; they had no work experience and presumably no undue exposure to noise. This study differs from a number of comparable studies in that the population was unselected, of a younger age-group, and composed of untrained listeners. Testing was carried out throughout the entire year and special attention was paid to equipment and procedures.

A norm on reference hearing level has not yet been established for children in this study. It will be established after the investigation of as many as possible of the factors which may influence this reference level. The data presented, however, clearly indicate that this norm is significantly lower than the reference level currently in use.

The implication of findings of this study with respect to identification audiometry should be considered in relation to desired goals. If the goal is to identify children with a hearing problem which is functionally handicapping, the implications will differ from the situation in which the objective is to locate children with a medical or health problem. The goals dictate the details of practices, procedures, and personnel to be used in identification audiometry.

Screening levels currently employed in audiometry at 15 and 20 db above audiometric zero, and sometimes higher, appear to be determined partially by recognized existing noise levels in typical school situations. The screening level of 15 db has been generally recommended because it appeared to be the lowest that might be realistically achieved. Since it is now clear that the hearing levels of children are significantly lower than has been assumed, the result has been that many school audiometric programs may have measured the ambient noise levels, when attempting threshold measurement, rather than the hearing levels of the children. If this is the case, these programs have grossly underestimated the hearing sensitivity of the children tested.

It is admitted that identification audiometry as now practiced locates many children with functional handicaps. Is it important, then, to consider the hearing levels of children below a handicapping level, whatever this may be? It is felt that it is of prime importance to realize the low levels at which most children hear and that a child can have a great decrease in hearing sensitivity or threshold shift, indicative of underlying pathology, without the decrease being detected by present identification audiometry. If we are to detect the child with decreasing hearing sensitivity, and thus be in a better position to prevent hearing loss and conserve hearing, we must have a baseline from which to measure a decrease in sensitivity and we must not be satisfied with identifying that child only when a hearing loss becomes handicapping.

Reference is made to a hearing loss which becomes a handicap. In this connection, a definition is needed for a screening level for children with hearing handicaps. Clinically we may be able to define the extremes of 'handicapping,' but between these extremes an area exists in which it is difficult to make decisions as to what constitutes 'handicapping.' In this area there may be a significant deviation from the norm which is handicapping to one child and not to another. The problem of handicapping hearing loss needs further serious study and clarification.

Audiometric screening methods used to detect handicapping hearing loss are also being used currently for health screening purposes. The data from this study show that screening audiometry for handicapping hearing loss uncovers only a small percentage of children with demonstrable otoscopic abnormalities. The missed cases will include both active and inactive pathological conditions. Active pathological conditions need treatment, and once the condition has become inactive, medical supervision and guidance are still needed in varying degree and for different periods of time. Audiometry, as one of the methods of identifying ear problems needing medical attention, has stringent demands put upon it in respect to acoustic environment, equipment, and personnel.

The acoustic environment which must be attained if hearing levels are to be determined at low levels with accuracy has been specified (*1*). From experience gained in our study and from other sources it is known that many commercially available audiometers do not measure hearing levels with accuracy at the low levels at which children hear. It was learned that audiometers can be modified to correct this defect in linearity and that it is possible for audiometers to meet the American Standard Specification.

The goals desired for identification audiometry will dictate the procedures needed for their attainment. An initial decision must be made with respect to the goals, and then a subsequent decision made as to whether the procedures are feasible and practical. If any compromise is to be made, the limitations imposed upon the identification method should be clearly understood.

Acknowledgments

Financial support for the study was provided by grant number B2375 (C3) from the National Institute of Neurological Diseases and Blindness, and by funds from the American Academy of Ophthalmology and Otolaryngology to the Subcommittee on Hearing in Children. Financial support in addition to that of the Subcommittee on Hearing in Children is provided by a grant from the Children's Bureau through the Commonwealth of Pennsylvania Department of Health to the University of Pittsburgh.

Members of the Subcommittee on Hearing in Children: Raymond E. Jordan, M.D., Chairman, Clinical Professor of Otology, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; John E. Bordley, M.D., Professor of Laryngology and Otology, The Johns Hopkins University School of Medicine, Adjunct Professor of Environmental Medicine, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland; Victor Goodhill, M.D., Professor of Surgery (Otology), University of Southern Cal[illegible]ia, and Consultant to John Trac[illegible], Los Angeles, California; Ho[illegible] McHugh, M.D., Associate Pro[illegible] of Otolaryngology, McGill University, Montreal, Canada; S. Richard Silverman, Ph.D., Director, Central Institute for the Deaf, Professor of Audiology, Washington University, St. Louis, Missouri.

Consultants to the study from the University of Pittsburgh include Isidore Altman, Ph.D., Professor of Medical Statistics; Leo G. Doerfler, Ph.D., Professor of Audiology; Raymond E. Jordan, M.D., Clinical Professor of Otology; and Samuel M. Wishik, M.D., M.P.H., Professor of Maternal and Child Health.

Dr. Leo G. Doerfler's assistance in the preparation of this paper was of inestimable value. The fine work of the staff of the study is also gratefully acknowledged, in particular that of Herbert S. Levine, M.Sc. (Hyg.), Biostatistician; William Melnick, Ph.D., Audiologist; and Mrs. Shirley J. Bakker, Administrative Assistant.

Reference

1. American Standard Criteria for Background Noise in Audiometer Rooms, S3.1-1960, American Standards Association, 10 East 40th Street, New York 16, New York.

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., October 27, 1975.

Hon. CARL PERKINS,
Chairman, Education and Labor Committee,
Rayburn HOB,
Washington, D.C.

DEAR MR. CHAIRMAN: I thought that you might be interested in the enclosed views of the President-Elect of the Pennsylvania Academy of Ophthalmology and Otolaryngology on H.R. 4902, the Vision Screening Bill.

Sincerely,

BILL GOODLING,
Member of Congress.

PENNSYLVANIA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY,
Bedford, Pa., October 13, 1975.

Hon. WILLIAM F. GOODLING,
Longworth House Office Building,
Washington, D.C.

DEAR CONGRESSMAN GOODLING: I have before me a copy of HR # 4092; and I am surprised if there is a need for this legislation.

In Pennsylvania we have a very fine visual screening program carried out by the school nurses. These nurses are well qualified and do a very good job of carrying out the program in our schools. The nurses are well trained and their execution of the program, in our state, is entirely satisfactory. Not only do they advise eye care when it is needed, but they follow up their recommendations and assist the parents in carrying out the doctors orders.

For those who are not able to provide glasses or the necessary treatment, the various agencies in the state have been very effective in paying these bills. There may be some states that do not have these programs in the schools, but I am proud to say that the children in Pennsylvania are well cared for and we do not need this type of legislation.

I am wondering if some people are not trying to increase government control where it is not needed and not desirable.

Sincerely yours,

PAUL A. COX, M.D.